

THE WORLD'S BEST-SELLING AMIGA MAGAZINE

AMIGA FORMAT

ISSUE 49 ■ AUGUST 1993 ■ £3.25



AMIGA
FORMAT
Cover
Disk 49

STARDUST

Asteroids on Acid!
Totally addictive demo of a
classic style shoot 'em up from
hot new coders Bloodhouse
Plus all the usual utilities, PD
programs and tutorial files.

All Amigas • Demos require 1 meg

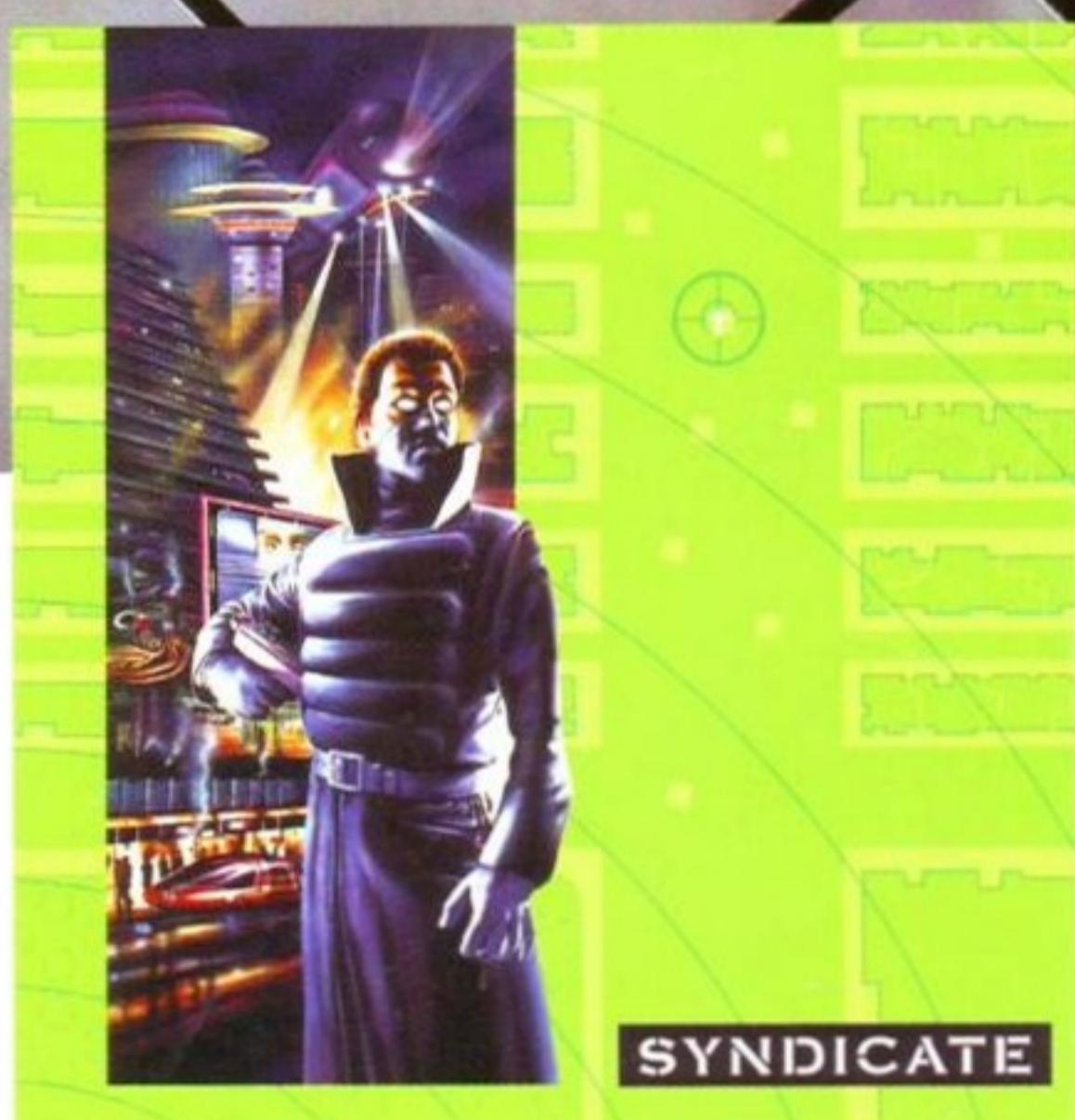
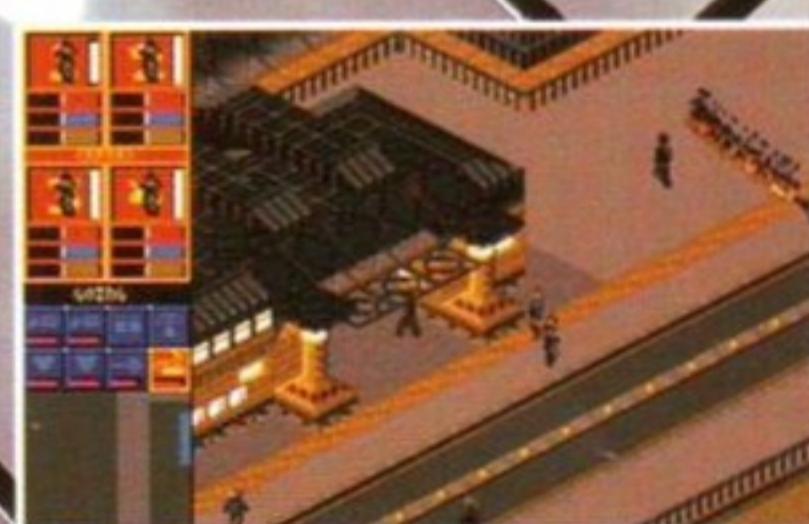
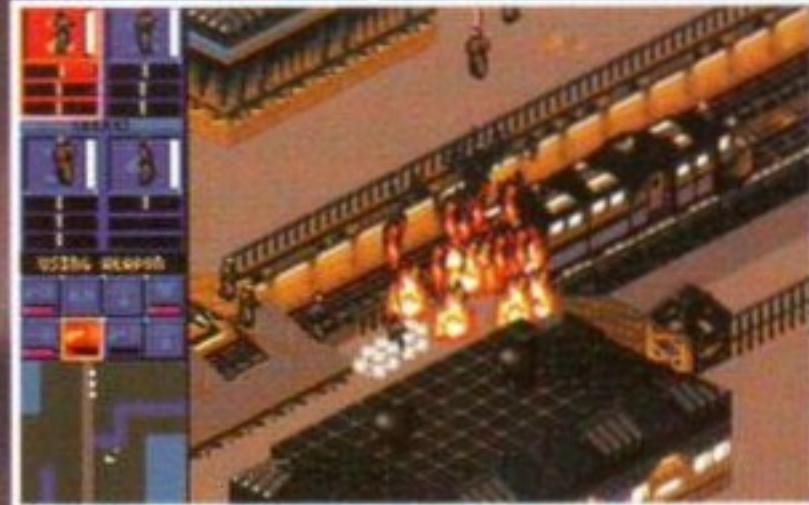
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new worlds
with our essential
guide to Amiga 3D

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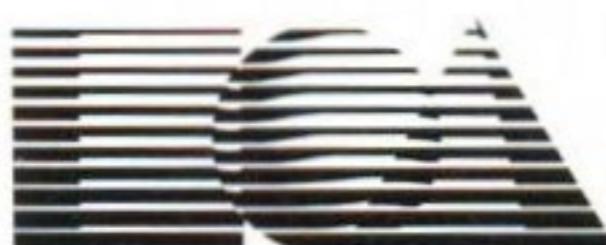
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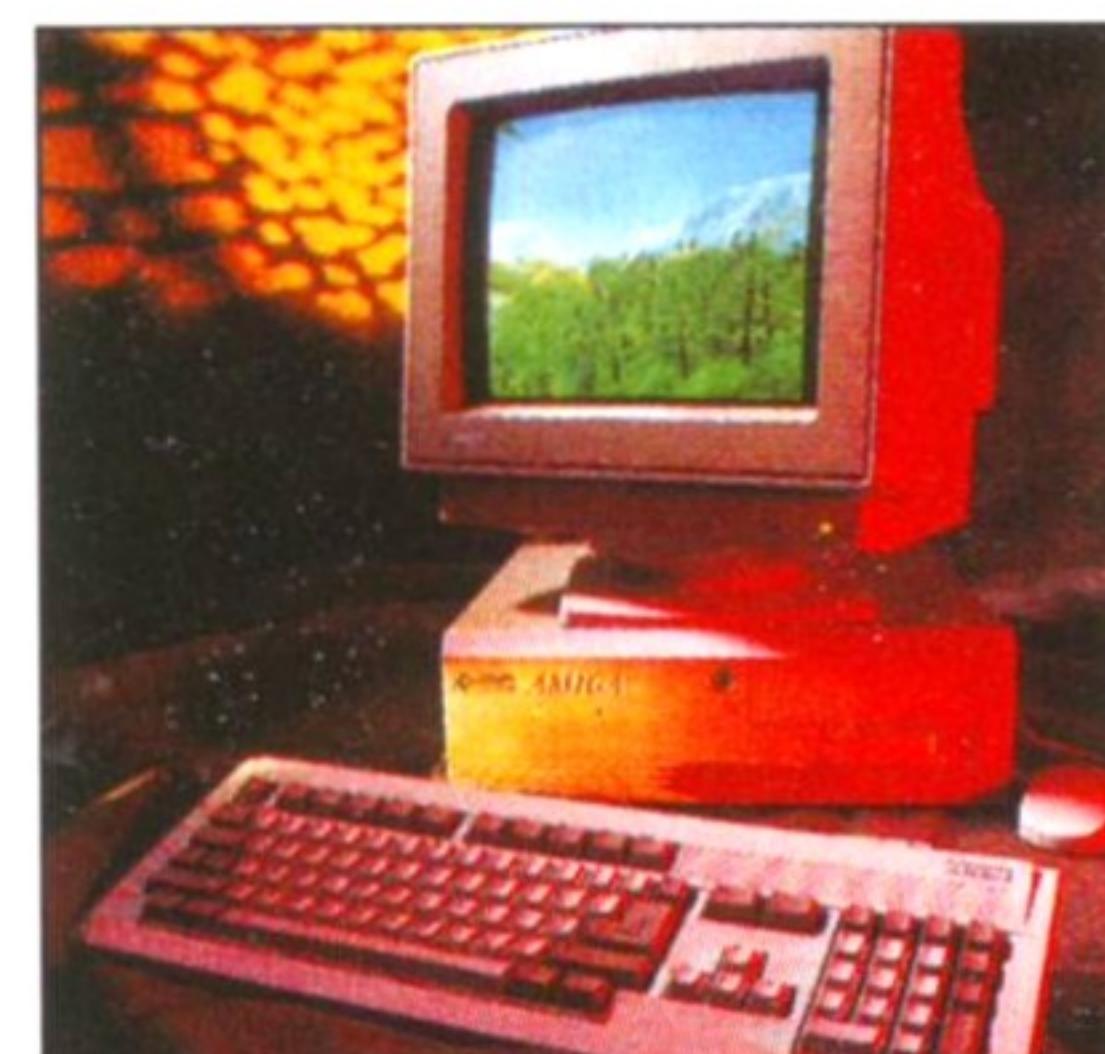
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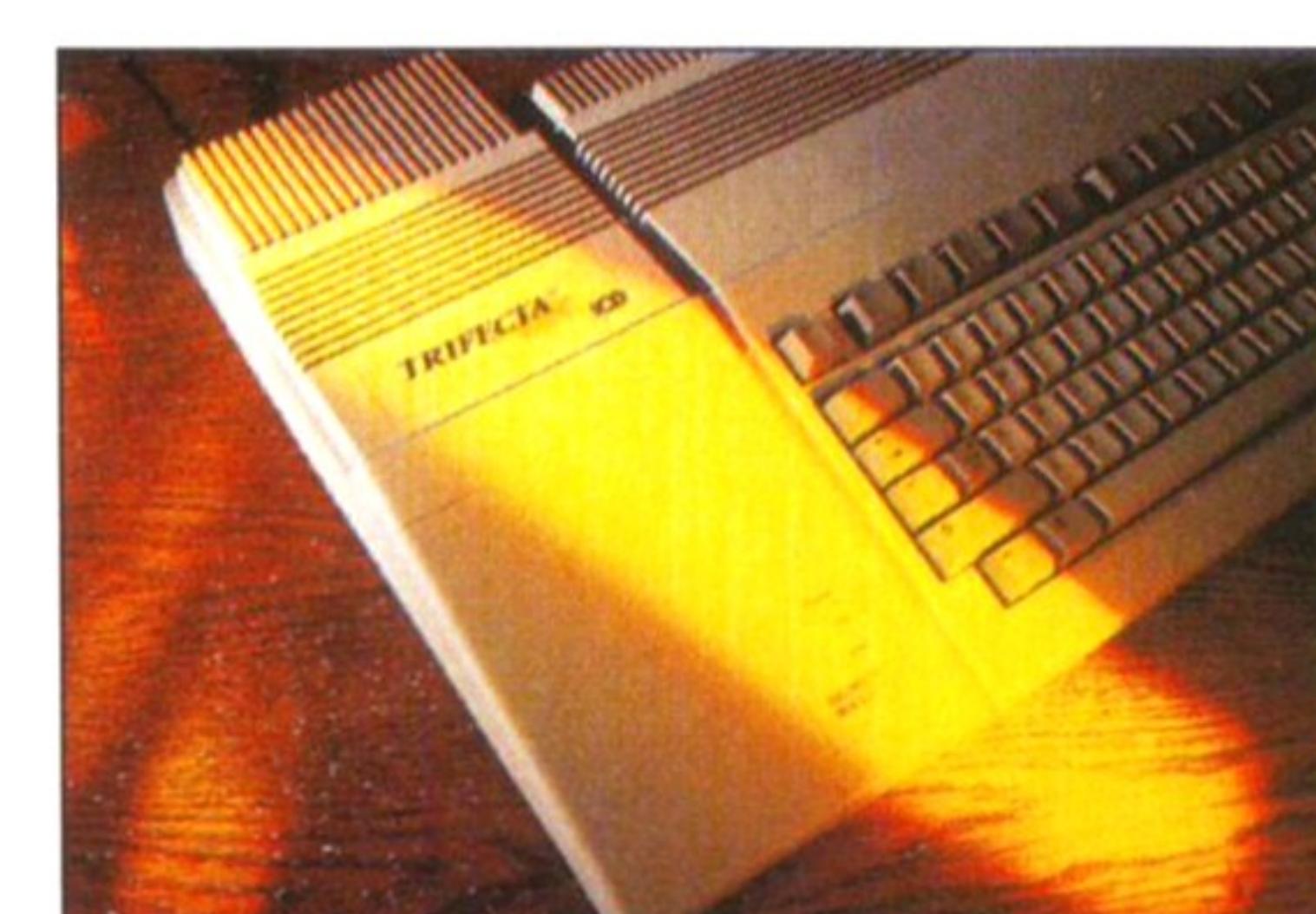
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REVIEWED:
Home Music Kit

Power Computing's home music package comprises stereo speakers, MIDI interface, software disk and sampler. Is it any good? See page 132.



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A slideshow of stunning sensual images from excellent coders Revelations. Enjoy! Page 155.

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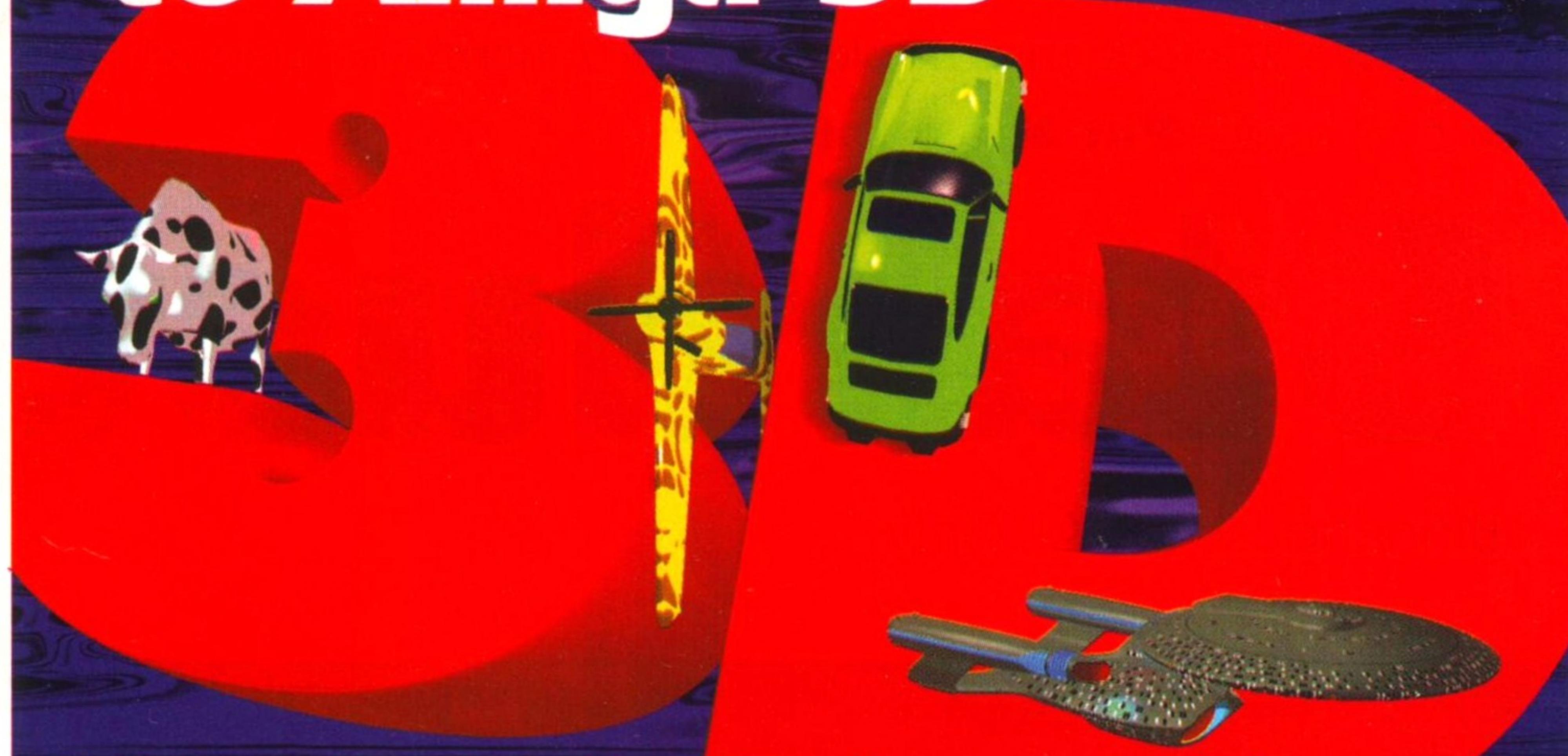
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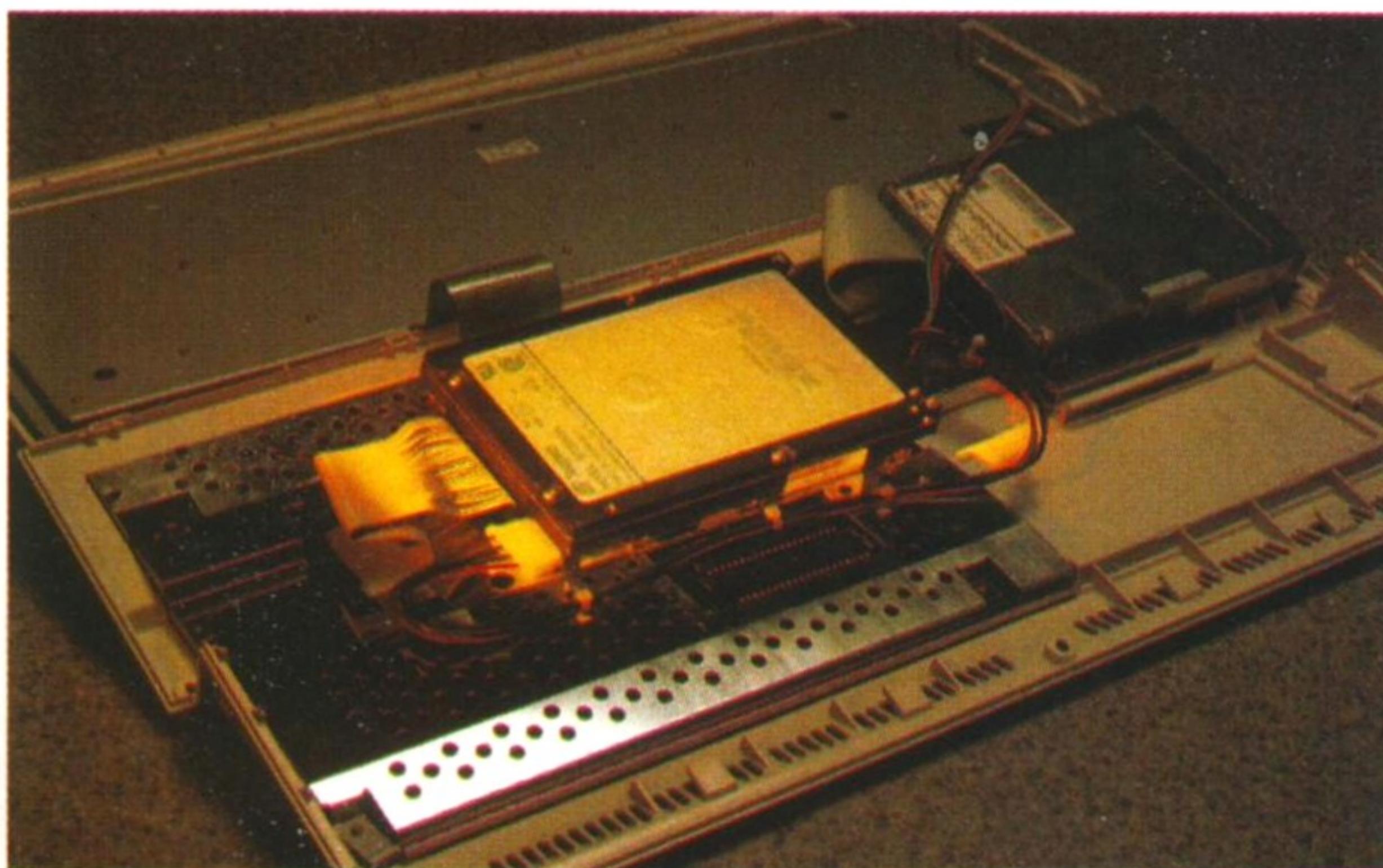


- 3D modelling – how it's done and how you can do it
- 3D round-up – choosing the right ray tracing package
- Bit.Movie '93 – we take a trip to this top computer art festival
- How we created the cover of this magazine

WIN! 20 IDE disk drives up for grabs

We're offering 20 40Mb drives courtesy of Software Demon, who have also given us a copy of Civilization AGA to add to each prize package. Find out how to be more powerful on... **PAGE 56**

WIN! A day at Evelyn Glennie's and Greg Malcangi's recording studio **PAGE 135**



Welcome to Amiga Format!

Tough times for Commodore! Despite the continuing success of the Amiga in the UK, the Big C's fortunes have not been so good worldwide. When Commodore should have been concentrating on their premium product, the Amiga, they were wasting time and resources targeting the PC market, which is cut-throat to say the least. When they should have been making the Amiga better, cheaper and more attractive, they were resting on their laurels, and considerable sales.

The Amiga succeeded as a games machine, although it was never intended as such, and that market has been ravaged by the consoles. So Commodore have been left to shut down offices and make redundancies world wide. What does this mean to you and I, the Amiga owner? Well... possibly nothing! Commodore's recent actions have been a rationalising of the organisation, and they are now a leaner and fitter company, better equipped to face the future. We wish them well in their fight to regain profitability. But

if they fail it does not mean the death of the Amiga. Commodore have a hot new CD-based console waiting in the wings. It makes the Mega CD seem like a sick joke, and it deserves to be a success. But battling against Sega's multimillion pound advertising campaign will not be easy for Commodore in their current condition.

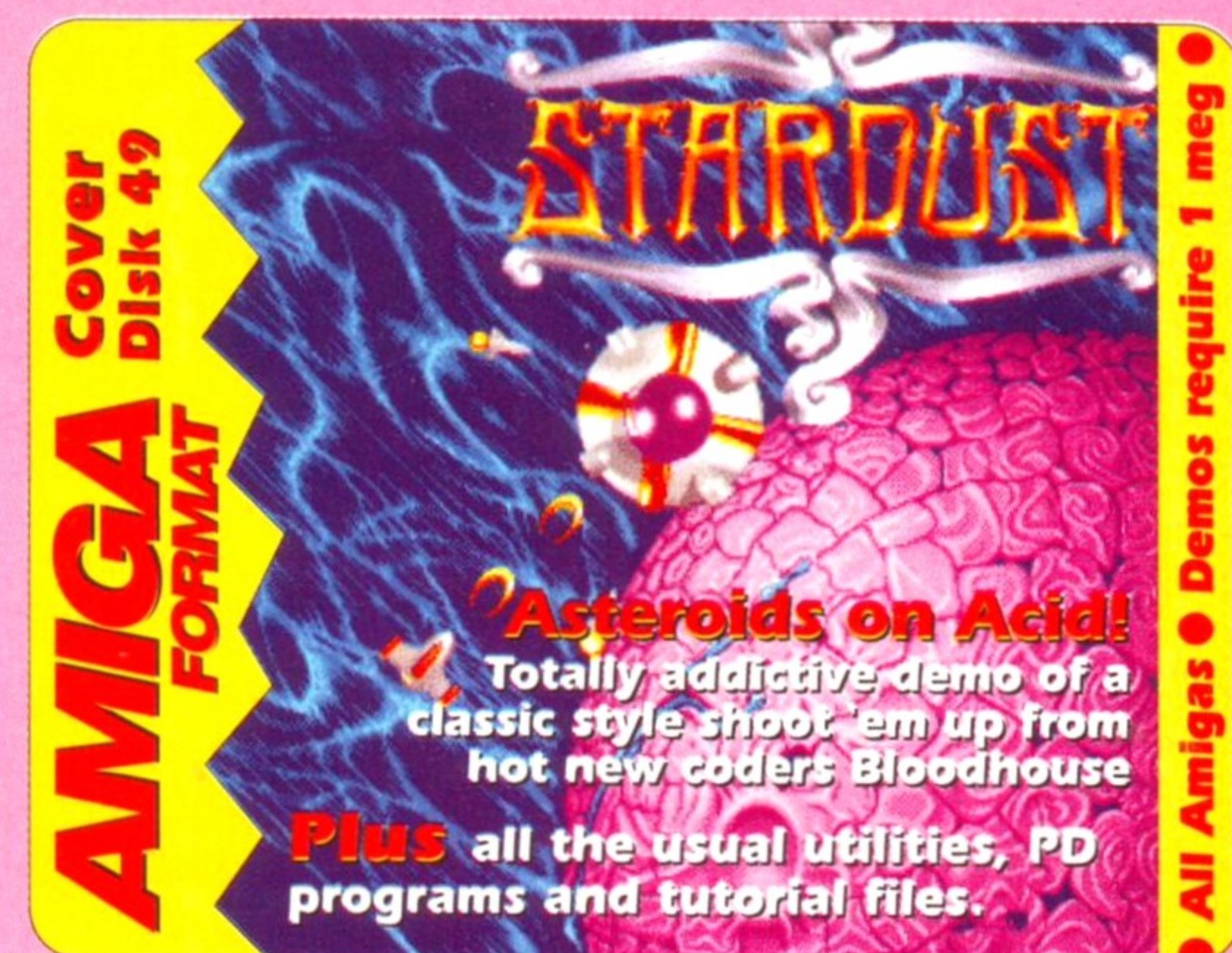
But whatever happens to Commodore, the Amiga technology, and the Amiga name, will persevere. The chip set is too good to go to waste and the machines are too great to be left to lie fallow. If Commodore fail to turn the economic tide, there will be a whole host of companies keen to jump in and take the Amiga into their product range.

Don't worry, but do stick around, there will be interesting times ahead.

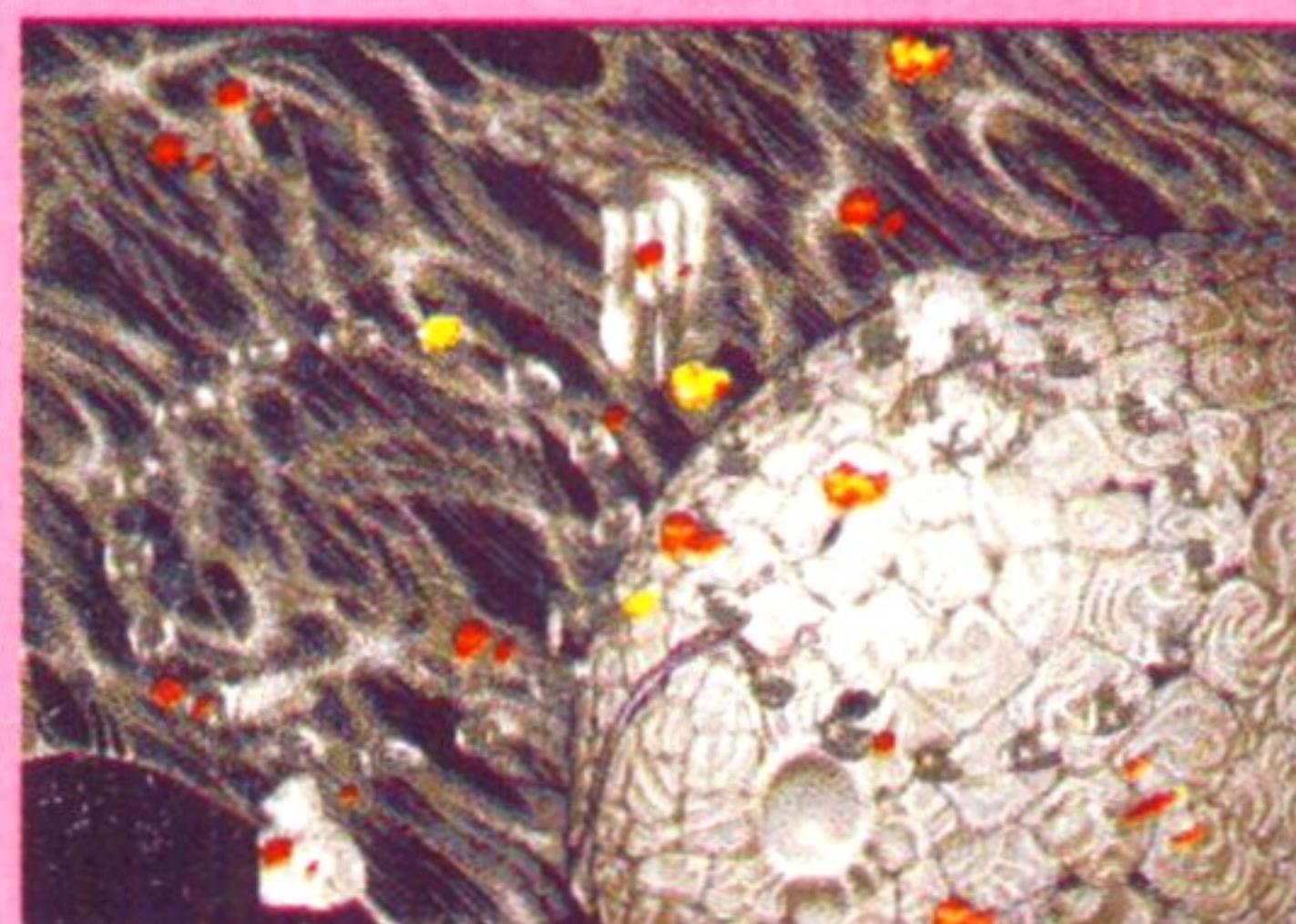


Marcus Dyson, editor

ON THIS MONTH'S COVERDISK



Stardust



Imagine a game with the graphics of Team 17 and the playability of an arcade classic. A new software house take an old game and

spice it up beyond recognition. Full Instructions on page 6.

Cheat Compendium



452 games are covered – whether it be how to activate the cheat mode, a few level codes or a simple way to see the end of

the game without playing it all the way through. Instructions on page 7.

A1200 Fixes

Want to play Speedball 2, Last Ninja 3, Shadowlands or Heimdal on an A1200? Well now you can, thanks to these four very special tweaking programs. For more information see page 7.

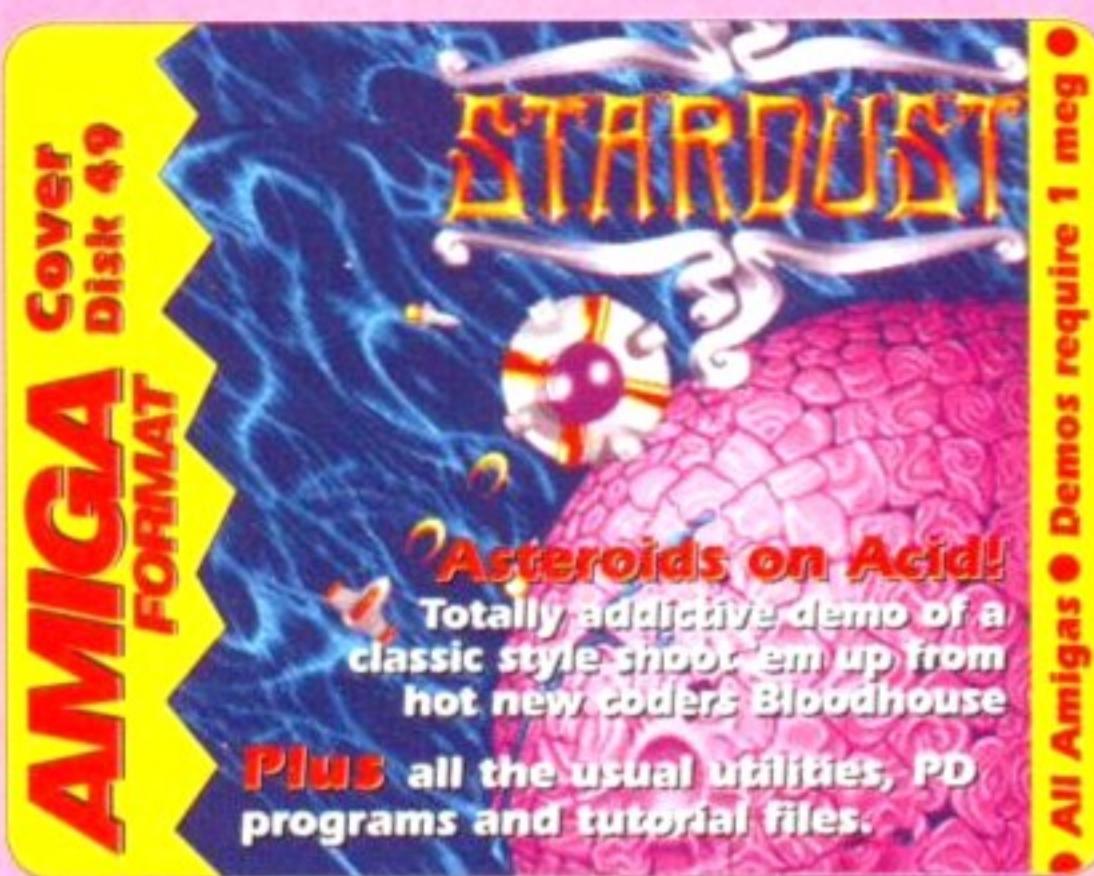
Genesis

Ever wanted to toy with a 3D rendering program, just to find out what all the fuss is about? Genesis offers simple, but effective, results and is very quick in action to boot. Further explanations on page 8.

Flexiparse

Of special interest to computer graphics students, this utility converts between the award winning Winsom format and Genesis models. Instructions on page 10.

Full Coverdisk instructions start on next page...

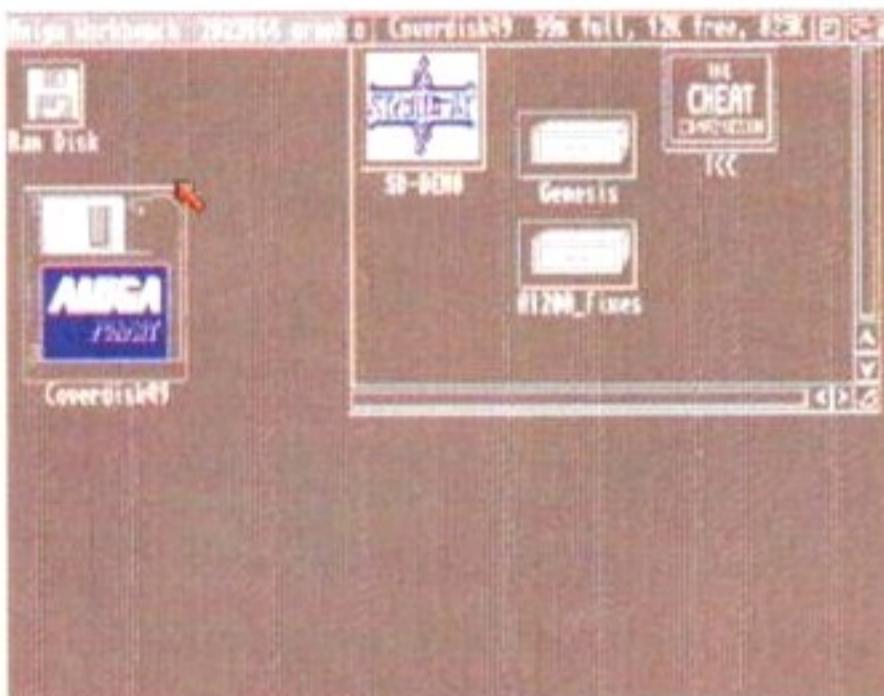


Well, if you want to go rock smashing, cheat at hundreds of different games, run incompatible games on an A1200 or just sit down and design a whole virtual 3D, here's the man who knows how – **Pat McDonald**.

Stardust

Bloodhouse ■ PAL Only

GETTING STARTED



Chances are, your Coverdisk won't look quite like this – but the differences are purely cosmetic.

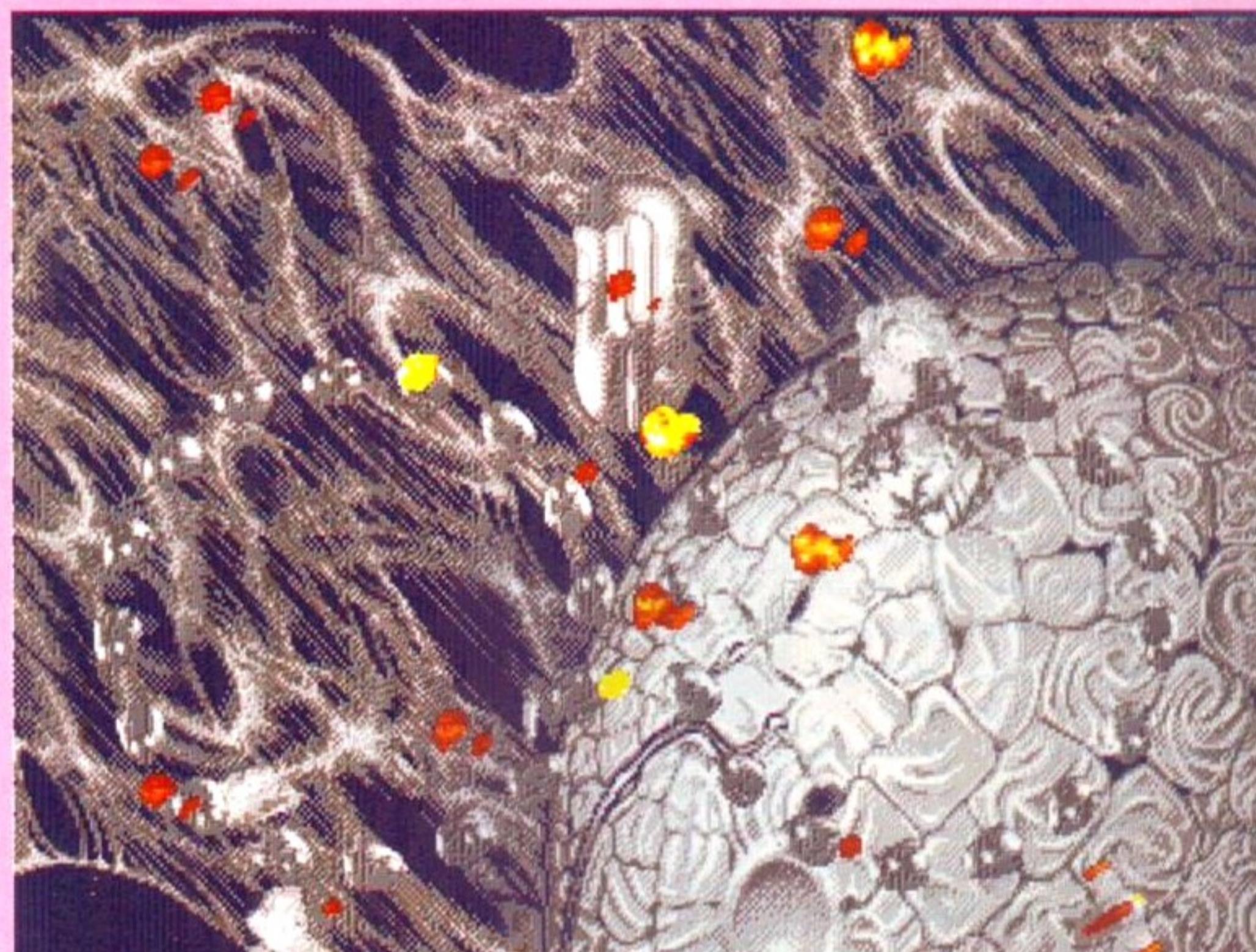
Alright, first an admission. Most of the programs on the disk are very easy to start and get going – with the exception of the programs in the *Genesis* drawer. To use *Genesis* or *Flexiparse*, I regret that you are going to have to get your hands dirty and use the Shell a bit. Loading instructions for these programs are on the relevant pages (8 and 10).

Right, for everything else, loading is very easy. Just turn on any 1Mb Amiga. Put the Coverdisk into the internal drive, and wait for Workbench to load (this takes several seconds, not minutes). Then, move the mouse pointer to the Coverdisk icon, and rapidly click on it twice with the left mouse button. This is called double clicking.

A window will open, displaying the contents of the Coverdisk. To run the *Stardust* demo or the *Cheat Compendium*, simply double click on the relevant icon. Both programs will take slightly longer to load than you are probably accustomed to – so it is best to check the floppy disk drive light to make sure either program is loading.

To run any of the A1200 fixes, just double click on the *A1200 Fixes* drawer, and then again on the Fix icon that you want to run. There are some icons to click on in the *Genesis* drawer, but these are explanations of how to use *Genesis* and *Flexiparse*, and also an explanation of Constructive Solid Geometry – how *Genesis* actually works.

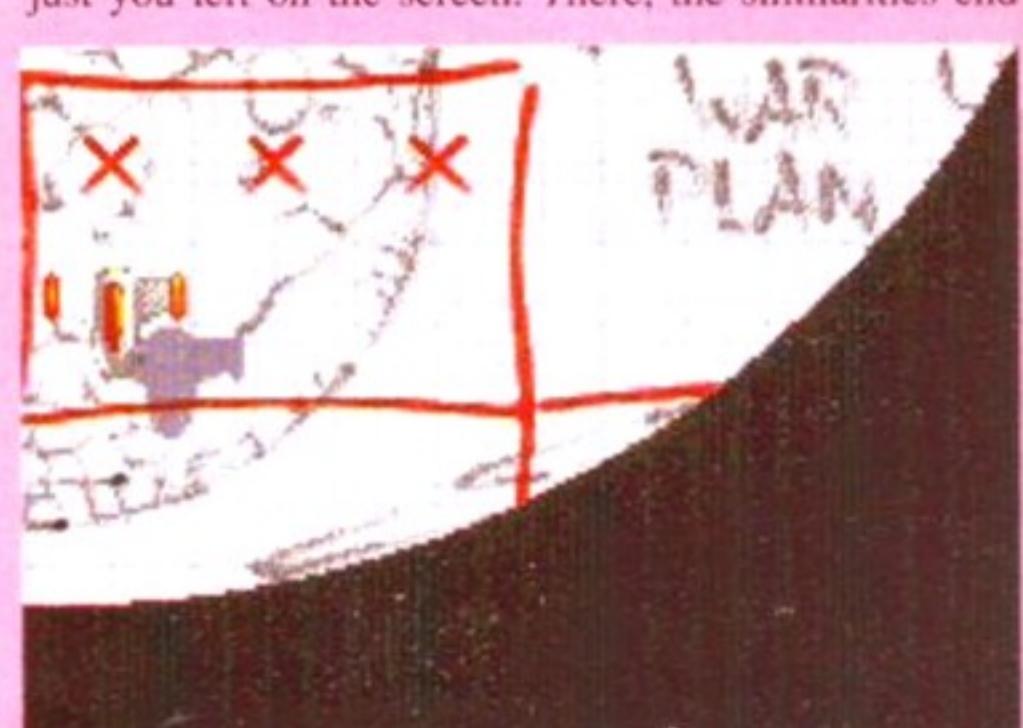
Please note that some programs talked about in the *Genesis* and *Flexiparse* documentation are not included on the Coverdisk, due to lack of space. However, everything necessary for the programs to work from the Shell is on the disk. The missing programs should be available from good Public Domain libraries.



Oh dear, out of time. The screen colours start going absolutely bananas, and the twin rings of aliens drop your life expectancy to mere seconds. Come out blasting or twisting – oops, dead again.

THIS IS AN *Asteroids* play-alike, from a new Scandinavian software house. It's not a clone of the classic arcade hit, but uses the game format with lots of pretty extras added.

If you've never heard of *Asteroids* before, then the basic rules are very simple. You control a spaceship which starts in the middle of the screen. You have to shoot the asteroids, which disintegrate into smaller pieces, which diminish further when shot, until there's just you left on the screen. There, the similarities end



To choose which level you start on, move the joystick to a space without a cross, then press the fire button.

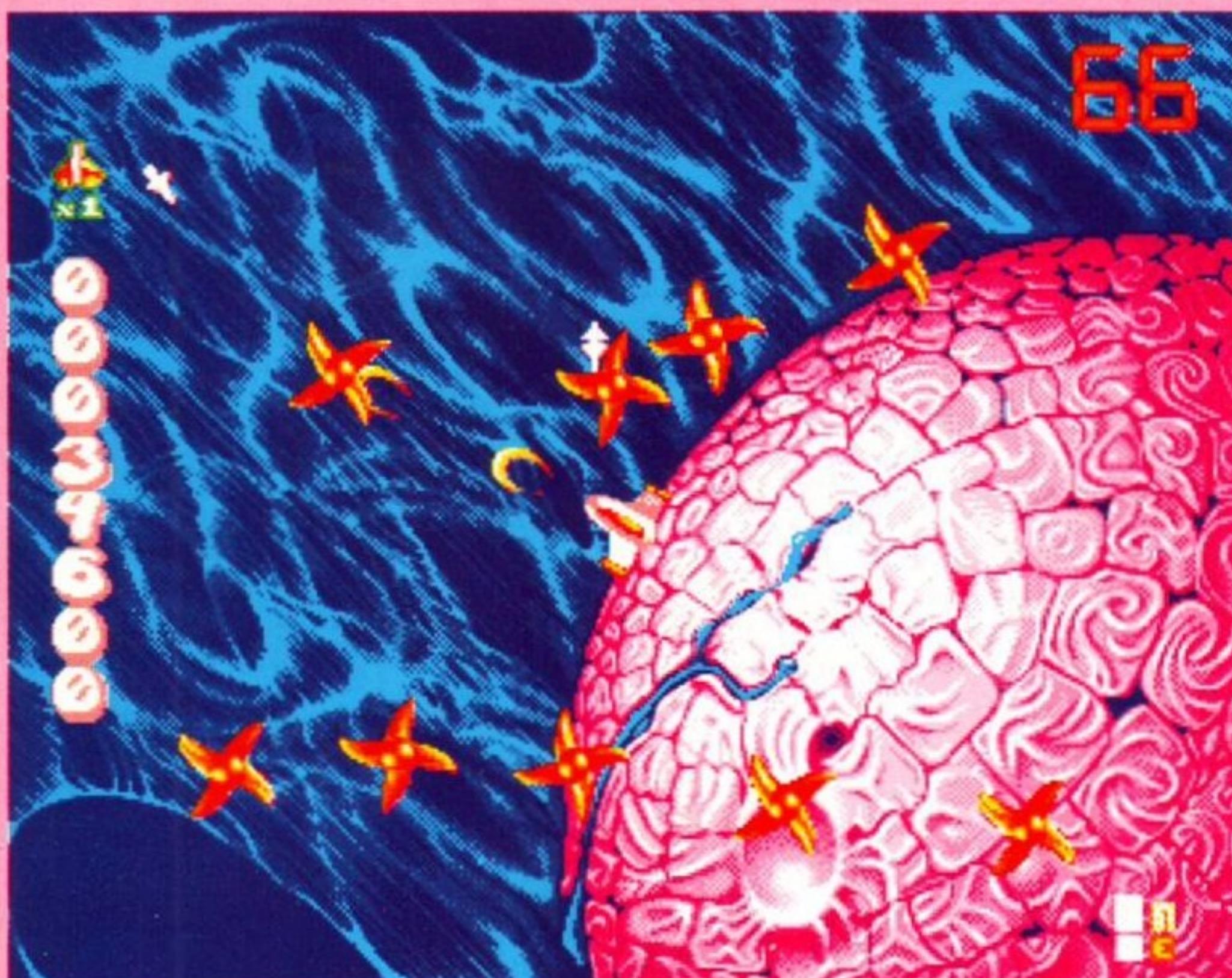
and the additions begin. Different coloured asteroids take more or less hits to destroy. As a rule of thumb, grey ones are a pushover and gold ones are very tough nuts indeed.

Another major difference is that you have three weapons to deal with the space rocks. The default is Plasma, very similar to the plasma shotgun weapon in *Alien Breed* – come to think of it, the entire game has a certain Team 17 feel about it. Which isn't a bad thing since they haven't produced a naff game yet.

Anyway, the other weapons are a flamer (very effective, but very short range) and a three-way cannon. I find these two pretty ineffective, but other people in the office swear by their own weapon. Having a choice means that you can find your own ways to play the game. Just press the spacebar to change weapons.

At the bottom right of the screen, you will see two status bars. The silver one is for your shield. Pull back on the joystick to activate this – you will be temporarily invulnerable, but the bar goes down rapidly. When it reaches the bottom, there's no more shield unless you pick up the right token.

The rightmost bar is for your energy level. When you hit a rock without your shield on, this goes down.



Time to blip your shield on for the middle mission – those shooting stars swarm all over the screen and it just isn't safe for a little spaceship like this one. Shields on, stars dead – where are the rocks?

When it runs out you explode and lose a life. So it's very, very important to keep both bars as high as you possibly can.

To do this, you have to pick up the right token. Tokens sometimes appear when you destroy the smallest asteroids. As the tokens spin, they change type. So it's a question of knowing what all the tokens do, and judging whether it's worth getting or waiting for it to change to something more worthwhile.

The nicest thing about the old asteroids was that you could spend forever with just one tiny asteroid to watch out for, shooting the alien ships to gain points. You can't do this in *Stardust*, because each level has a preset time limit.

If you go over this time limit, then two things happen. First, all current asteroids are destroyed, and the

screen goes through a very weird colour change. After that, an alien ship appears, which drops off lots of smaller ships. If this happens, you have to destroy all of these in order to get to the next screen. The rocks are a cakewalk compared to these – so watch your time limit and stay within it.

The final mothership only appears after you have cleared all three levels. Most of the time, your shots will be absorbed into its armour. The mothership only becomes vulnerable when it stops, opens its armour, and shoots at you. It's a bit tricky to finish off (even when it's vulnerable it's a tough cookie) but you should be able to finish the demo within about an hour. The final finished game will feature 30 levels and 10 end-of-level guardians for it – and I bet it's not nearly as easy as this demo!

PICK UPS: WHAT THEY WILL DO	
	Smart bomb
	G Gun power up
	C Control improvement
	S Shield
	P Points
	M Homing missile
	B Mega bomb
	X Extra life *

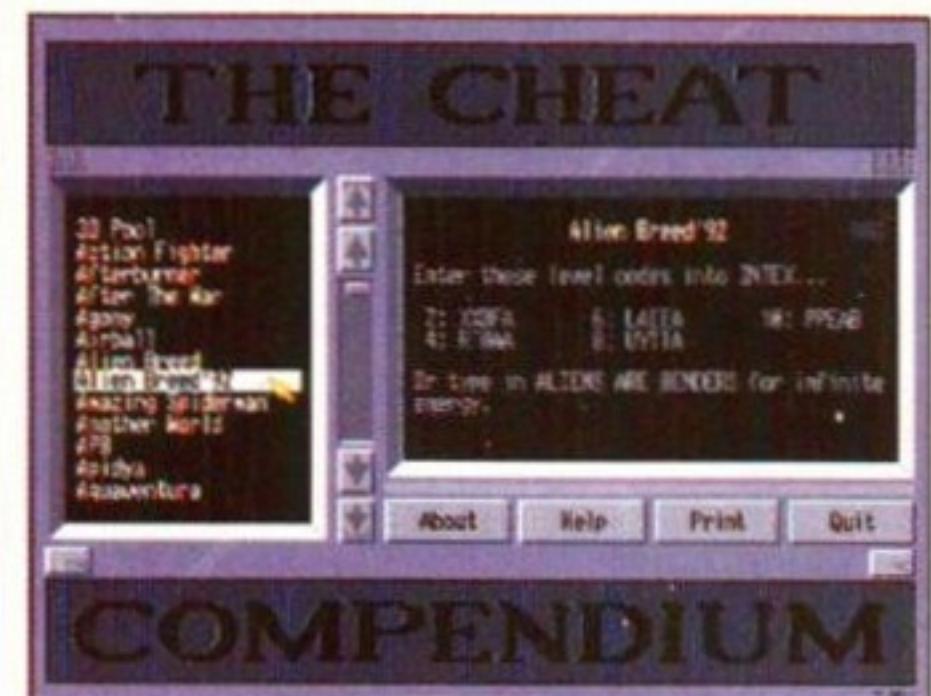
As with any shoot-em-up, *Stardust* contains plenty of items to pick up. These take the forms of spinning gold coins, each displaying a letter which shows what the pick up will do. The following table shows the range of pick ups and their effects:

(*although these exist in the real game, we've yet to find one in the demo. Still, there's not much point in three levels, is there?)

If you don't pick the coin up immediately, the letter will change – so if you need a particular weapon or bomb just be patient – it will appear eventually.

Cheat Compendium

M R Whiting, M Collinge
PAL only



Most *Alien Breed* cheats are unprintable – lucky there's one with a shred of modesty.

Want to see the hidden missions on FA/18 interceptor? Or find the elusive (and very rare) infinite energy trick on *Shadow of The Beast*? The Cheat Compendium has these and hints, level codes and passwords for 450 more games, all in an easy-to-use, point and click AMOS program. One word of caution though – it takes about 10 seconds from when you click on the CC icon, to when it actually starts loading. Be patient for this happen.

The authors have been very patient about it going on the disk, sending in updates and fixes over a six month period. All in all, it's a program that can save you many hours of searching through magazines. Admittedly it's a bit weak on solutions for very complex games like *Monkey Island 1* and *2*, or *Eye of the Beholder*.

So most of the games covered are arcade in nature. We make no apologies for this – after all, in-depth adventure games mentioned above can be solved by lots of experimentation and a lot of thought. Whereas if you just haven't got the reactions for an arcade, there's no way you are going to complete it. Go blow the dust off of your uncompleted software collection and see if this program helps!

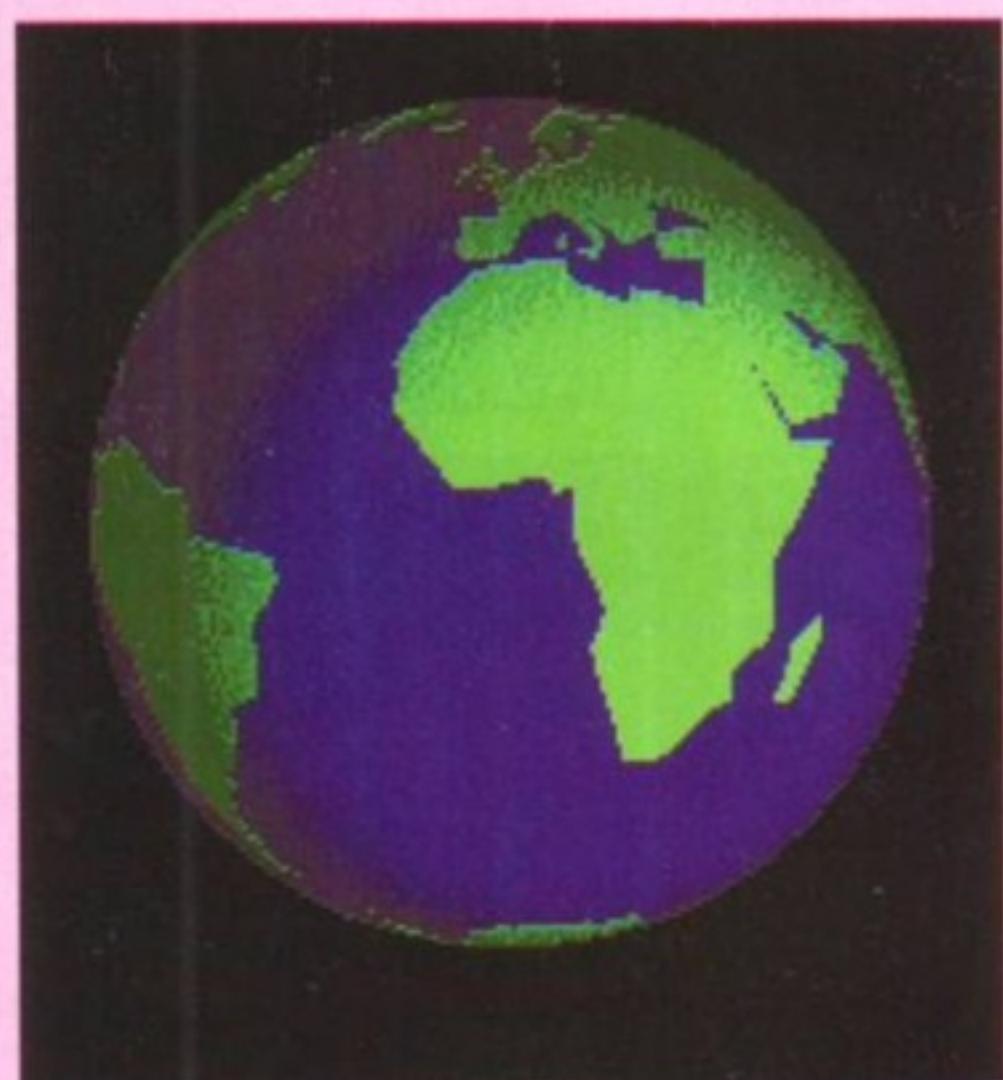
A1200 Fixes

Phil BB ■ A1200s only

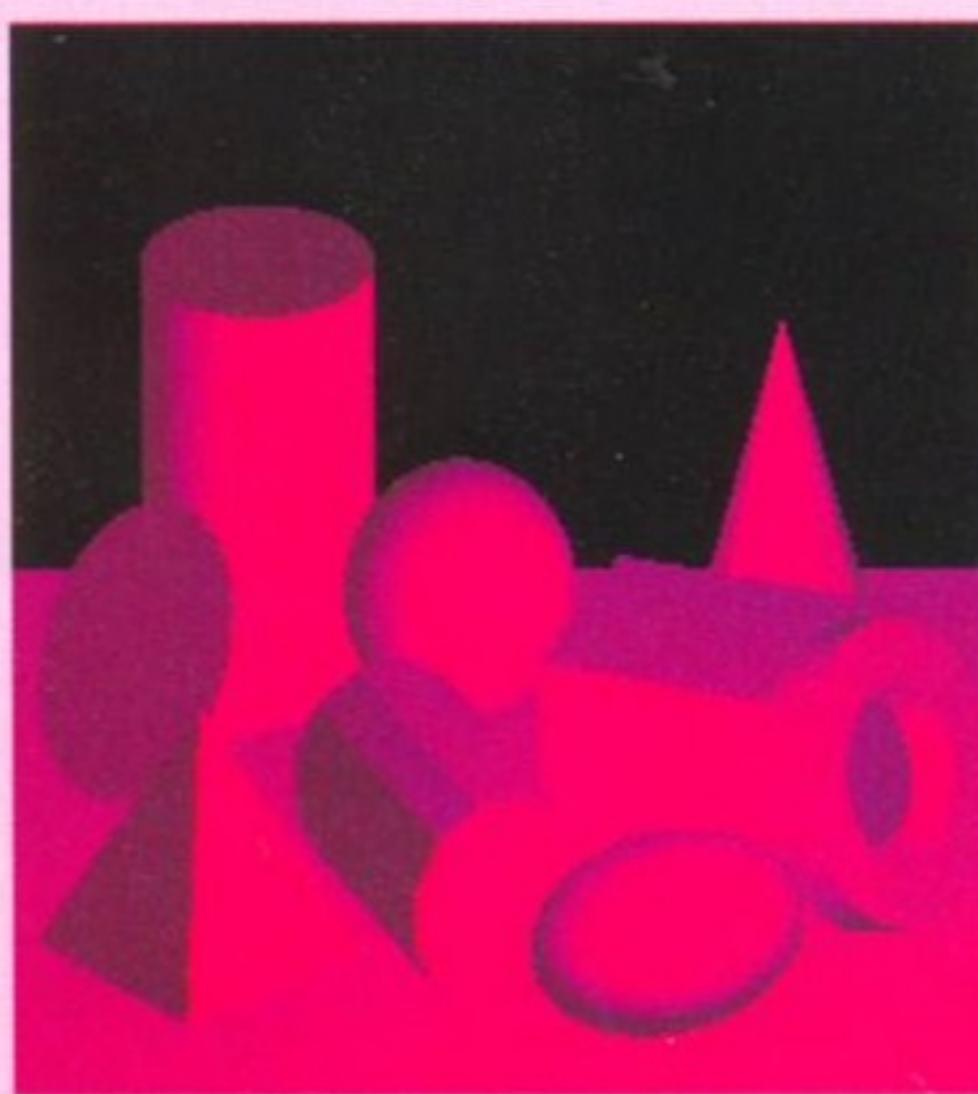
Oh, terrible incompatibility problems with the A1200. Doom, doom, the end of the world is nigh. Well, not according to the author of these four patch programs, which allow you to run formerly incompatible games on an A1200. Wow! The fixes in no way alter the disks, so you have to run them everytime before you try loading the games.

The four games in question are *Speedball 2*, *Heimdall*, *Shadowlands*, and *Last Ninja 3*. Well, *Last Ninja 3* actually works fine on an A1200, but it normally doesn't use the extra memory of the machine. If you run the fix first though, then you will have to put up with much less disk swapping.

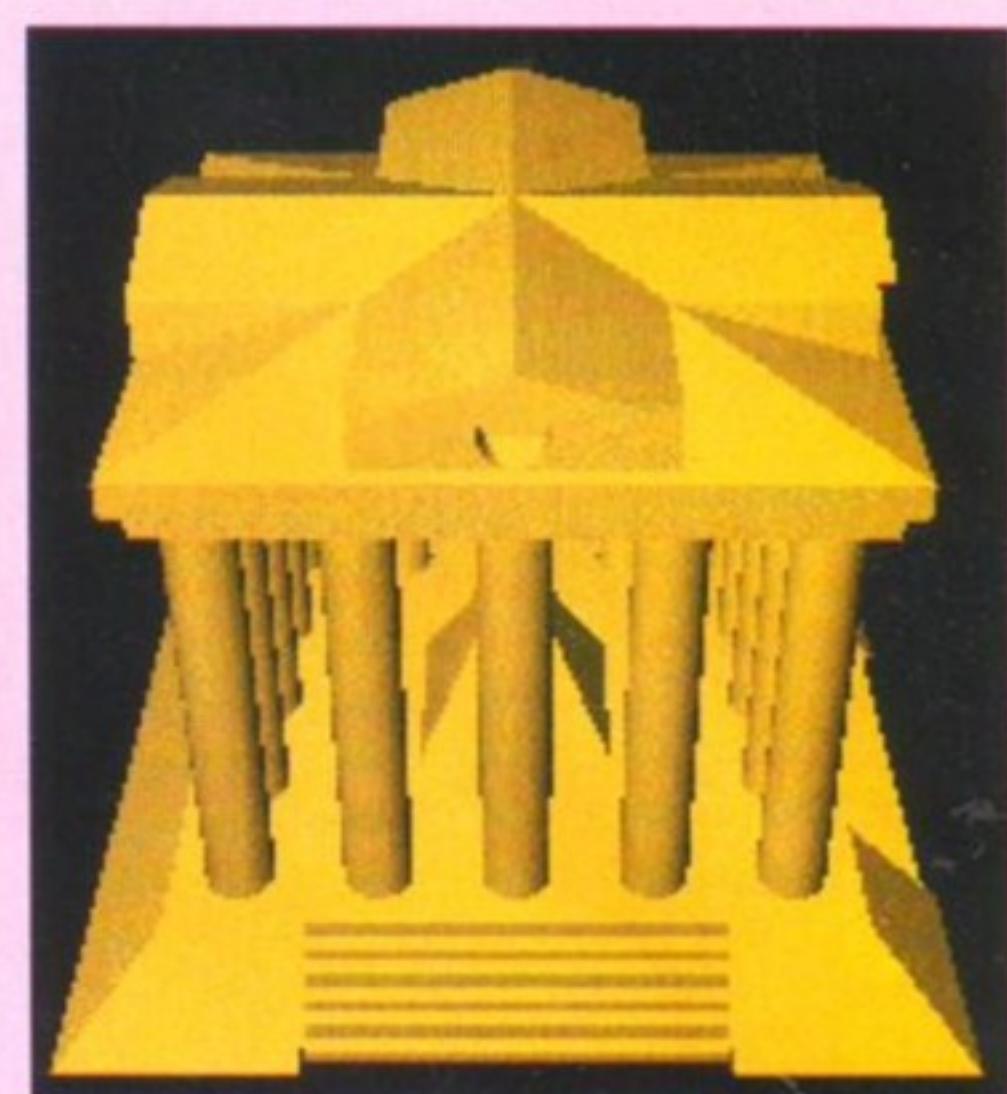
According to Phil: "Most of the incompatibility problems are down to very poor memory handling". He has been very careful so that the fixes will only work with original disks of the games, and not with pirate copies.



The Earth.model file does not quite render this image – the land is all blue and the sea non-existent. With *Genesis*, a tiny change produces huge ones in the finished picture.



Genesis' primitive objects on display – pyramids, cubes, cones, and cylinders are just some of your favourite building blocks which are included.



Computer 3D is best at producing consistently shaped 'artificial' objects like vehicles or buildings. Organic objects are very difficult to mimic with a computer.

Genesis

Steve Woodman ■ PAL/NTSC

THIS BEING A special 3D issue, we thought we had better give you a 3D rendering program, to give you a hands on taste of what it's all about. *Genesis* is far from perfect – it's not complete, nor is the companion program *Flexiparse*. Don't think you can turn out 3D wonders with it overnight, because it's controlled through the keyboard – no nice point and click interface on this program.

The program is closer in design to the ultra expensive mainframe computer graphics system of the early to mid eighties than an up-to-date program like *Real 3D 2*. It cannot even save out IFF files of the pictures it generates. However, included in the *Genesis* drawer is a program called *ScreenX*, which you can use to get graphics off the screen, and on to a disk. Just because it's clumsy to use doesn't mean it's no good. *Genesis* is a very fast 3D rendering program – faster than anything you will find in the Public Domain. You don't have to be a genius to get results out of it either, because in the Models and *Genesis* drawer, are some preset objects for you to experiment with.

Here's a rough outline of how it works. *Genesis* takes a model file, which is a description of a scene typed into a word processor or text editor. Contained within this file is information like the resolution and number of colours to use for the picture; primitive information about all the models; and incidental infor-

mation like the viewing position and what perspective to use. Such model files always have the word model as a suffix, for instance "World.model".

First Steps

Before you can run *Genesis*, you must first load Workbench, either from floppy or hard drive. Then find a CLI or Shell icon, and double click on that. Then type:-

CD Coverdisk49:Genesis

This forces Shell to look for commands from the *Genesis* directory on the Coverdisk – Shell Changes Directory. So, if you only have one disk drive, you have to swap disks. Once you are there though, you can run *Genesis* very simply:-

Genesis Models/Cheese.model

This will start the rendering program, with the cheese.model file from the Models directory. It takes a couple of minutes or so to finally finish. Incidentally, if you want to see all the models available on the Coverdisk, just type:-

List Coverdisk49:Models/Cheese.model

USING SCREENX

In order to extract the screens from out of *Genesis*, you have to use the supplied *ScreenX* utility. Using it is fairly simple. Simply double click on the icon from Workbench, and the *ScreenX* titlebar appears at the top of the screen.

In order to grab a screen from *Genesis*, just flick back to Workbench (pressing Amiga-N and Amiga M toggle through Workbench and launched programs), then point the mouse at the *ScreenX* titlebar and click once with the left button, and again with the right. Alter the filename and place to

save it on the box at bottom right, select the screen you want to grab from the list top left – it's usually the bottom screen on the list – then click on "Save IFF".

You should be aware of two things. First, saving IFF picture files on to disks without enough space on can corrupt the disk. Second, pictures from *ScreenX* are best loaded and saved in and out of *Deluxe Paint* in order for them to work with other programs. Apart from that, the best of British luck to you!

Further Exploration

There's not really much more I can say about the program in this small space, except that a full list of the syntax that *Genesis* accepts is contained in the *ReadmeGenesis* file (just double click on the icon). Also, if you want to really explore the system, then load the files from the model drawer into a word processor or text editor.

The .model files used by *Genesis* are very complex, and, to be honest, you are better off studying the .CSG Winsom files which *Flexiparse* translates into *Genesis* models. Winsom is a much simpler system, especially if you have a limited knowledge of computer languages. However, you must open the screens and set the camera viewpoint with *Genesis* – *Flexiparse* cannot do this.

Finally, this set of programs is freely distributable, but may not be altered in any way without permission of the author. Steve Woodman, while fairly happy with *Genesis* as a teaching aid, does not want the program developed further without his say so.

Oh yes, the files Dilbm, Pilbm and MovieMaker are not included on the disk, simply due to lack of space. The *readme* files have not been touched since they landed on Neil Jackson's desk one day. Now you know who 'Spikey Boy' is.

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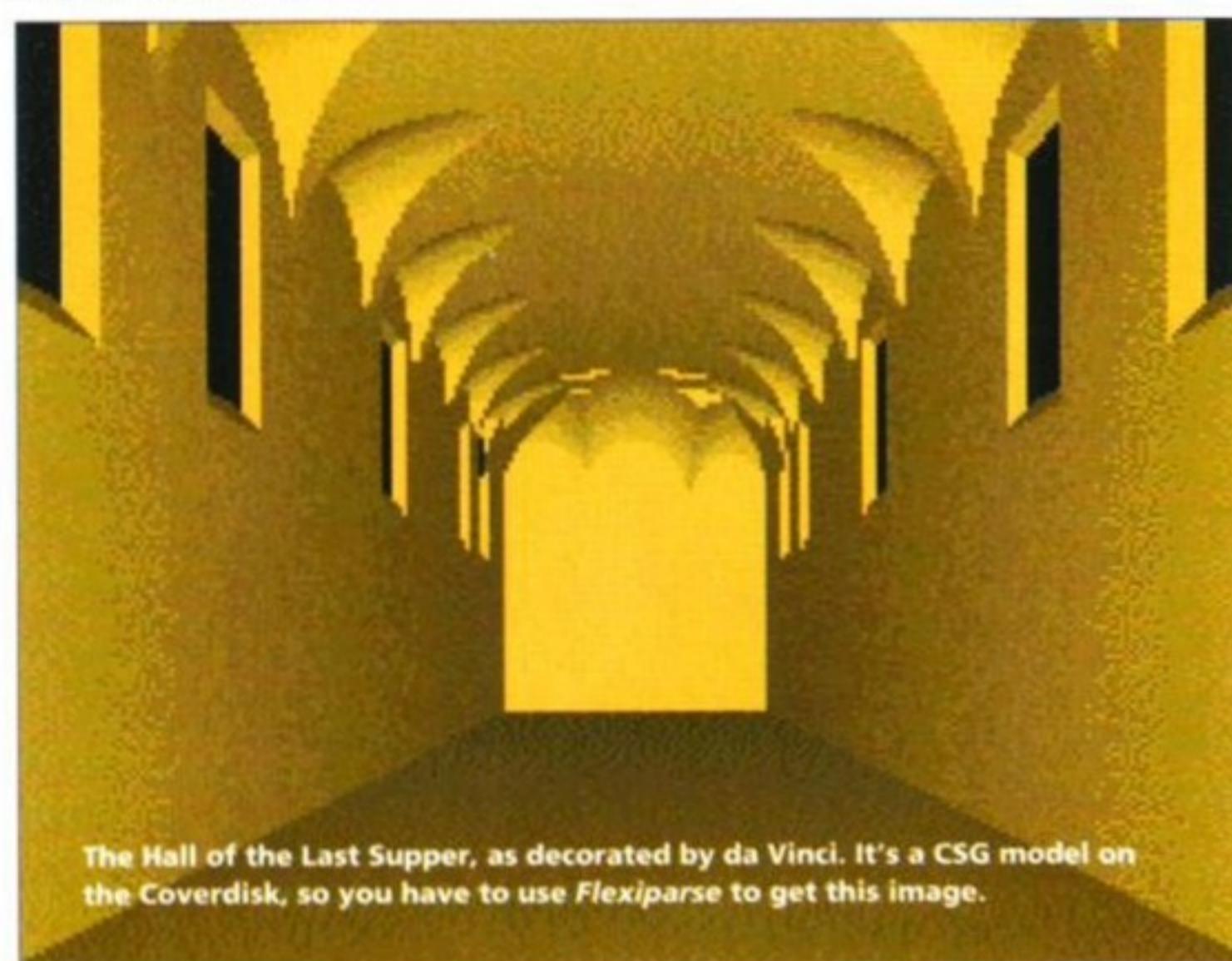
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STUDIOS

Virgin
GAMES



Flexiparse

Steve Woodman
PAL/NTSC



The Hall of the Last Supper, as decorated by da Vinci. It's a CSG model on the Coverdisk, so you have to use Flexiparse to get this image.

This is a really specialised program - it's only of real interest to those who have some Winsom graphic models that they can import to their Amigas. We're really only talking about university types and 3D specialists - but wherever Genesis goes, Flexiparse should go with it. If only to translate the Winsom .CSG files found in the Models drawer into true Genesis models.

However, there's quite a few quirks and a couple of bugs in Flexiparse. The reason it and Genesis are on the disk is to give you, the reader, a few insights into the highly complex and maths based world of computer 3D graphics.

Nobody would pretend that you could become an expert in the subject overnight. Genesis is educational, but only in teaching broad concepts. Flexiparse is simpler to understand Genesis, by a long stretch.

Here's how it works. Follow the same procedure as for Genesis, that is, type this into a Shell or CLI:-

CD Coverdisk49:Genesis

Then just type the name of the program to get it going:-

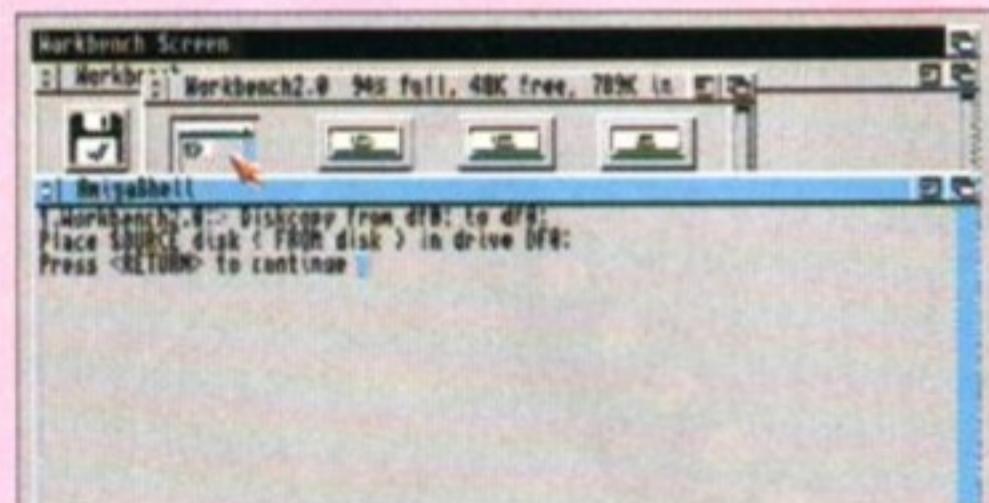
Flexiparse

The computer needs two different file names. The first is the name (and location) of the Winsom .CSG file that you want to convert. The second is the output directory - where you want the Genesis.model code to go, plus a name to identify it.

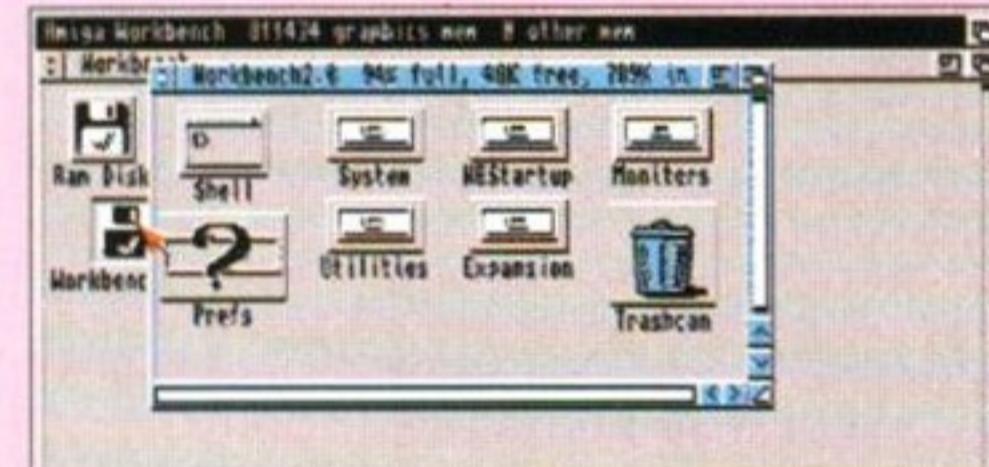
The program takes about five minutes to convert a 5000 line file from .CSG to .model format. That's on a floppy-based system. On a hard disk it's more like about one minute. Quite a saving, when you consider you may have to work and re-work the final picture, for not getting it right at the start.

Backing up your Disk

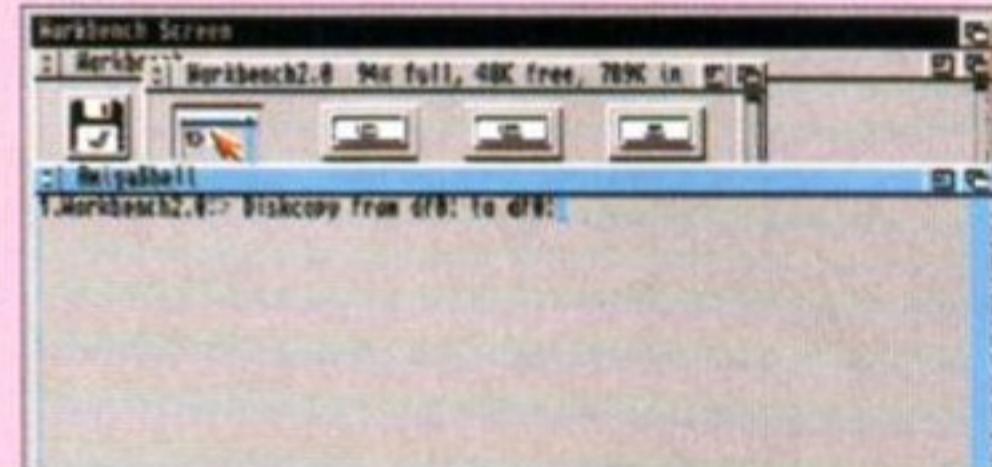
There are two ways of making a copy of your disk, and this is the easy one. Don't be daunted by the fact that you need to use the Shell or CLI: it's actually a lot easier than you might think. Just follow these simple steps...



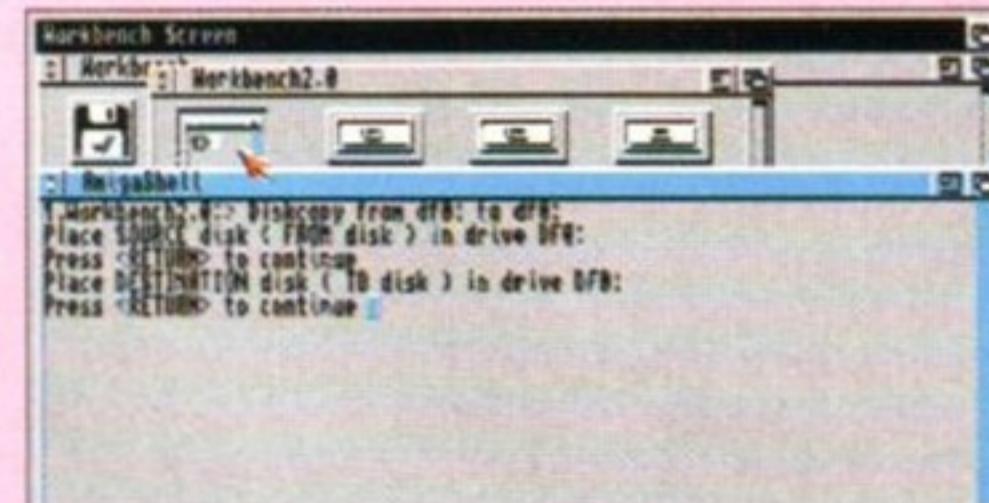
3 The Amiga will now ask you to insert the 'source' disk. It means the disk you want to copy, so put the Coverdisk in the drive and press the Return key.



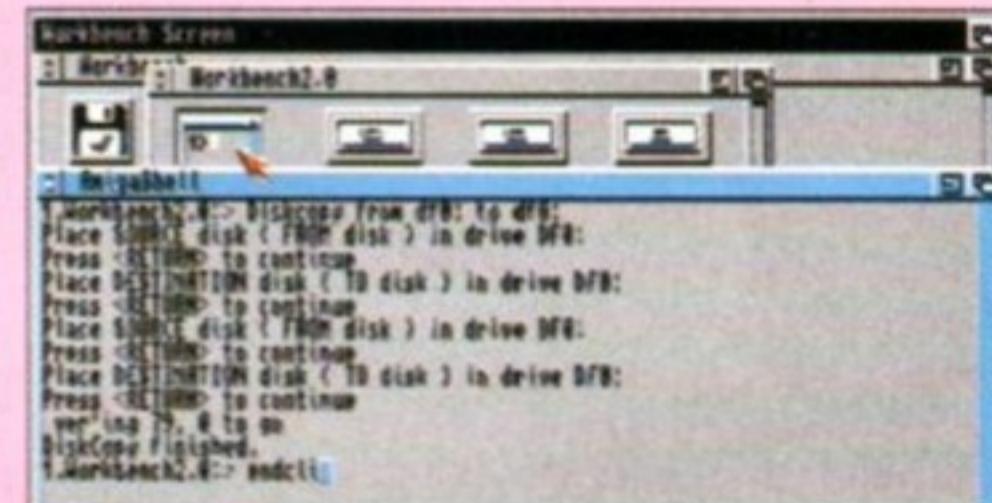
1 Load your Workbench disk. Open the disk, find the icon that says Shell or CLI and double-click on it.



2 When the Shell window appears and the drive light is out, type in (DFO as in Zero, not DFO as in Oops): Diskcopy from DFO: to DFO: and press the Return key.



4 Wait for a while and it will read all the information off the Coverdisk, telling you how far it has got. Then it will ask you to insert the 'Destination' disk. Put the disk you want to copy your Coverdisk on to in the drive and press the Return key. Note that the disk does not need to be formatted already.



5 Put the source disk and destination disk in a couple more times when the Amiga asks for them. When it says "Diskcopy Finished" just type in: endcli to get out of the Shell or CLI. You may have to put the Workbench disk in again. Now your copy is ready!

Disk not working?

We duplicate nearly 200,000 disks every month. Out of all those, obviously a few will be faulty. If the disk or any of the programs will not load or run properly, there may be a problem. Don't panic!

First try using the DiskDoctor utility on your Workbench disk to rescue it before sending it off for a replacement. In full details of DiskDoctor can be found in the user's manual that came with your machine.

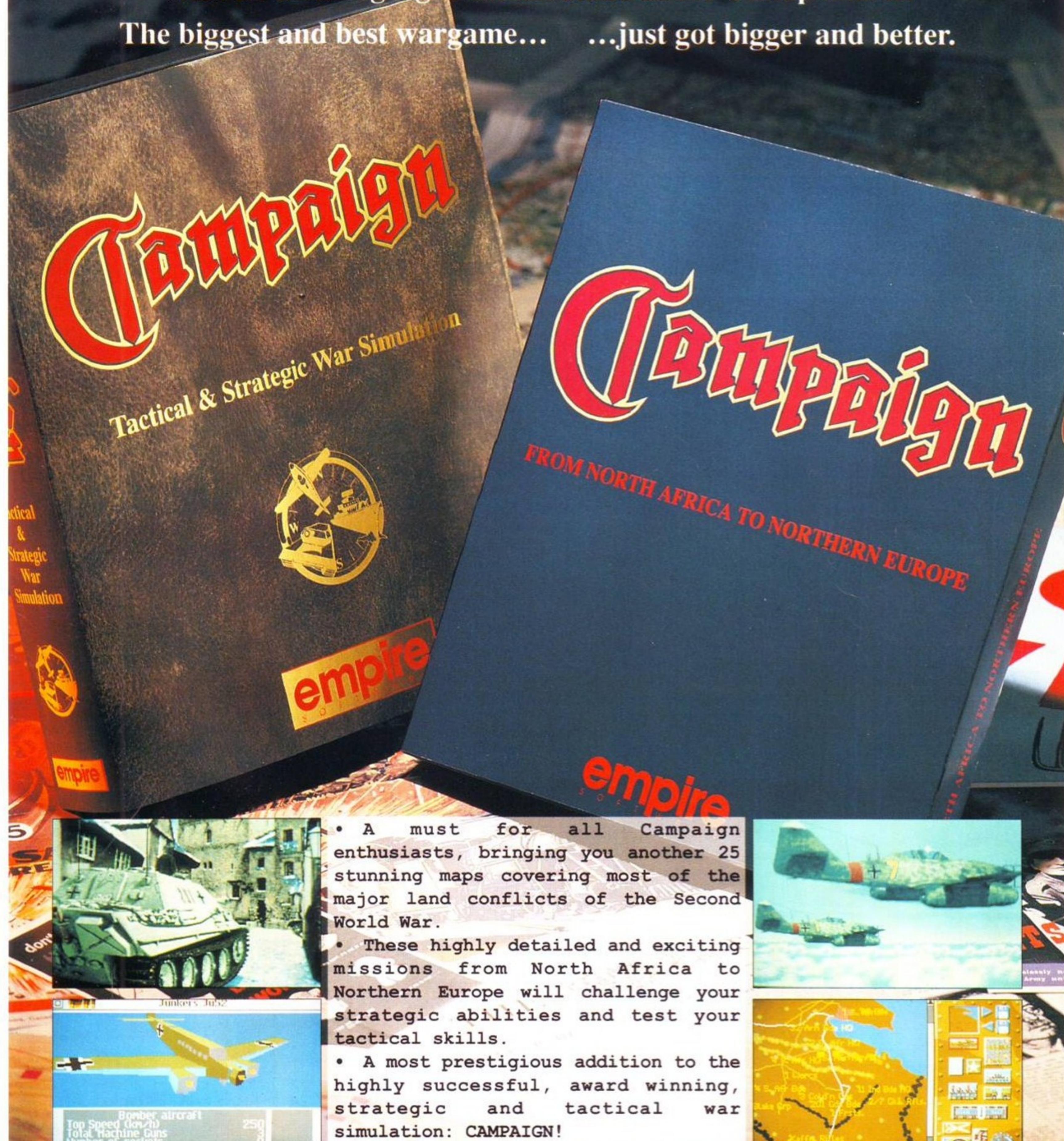
However, if your Coverdisk is in fact faulty, you should send it back INCLUDING A STAMPED, ADDRESSED ENVELOPE for a free replacement within one month of the cover date to:

Amiga Format August Disk
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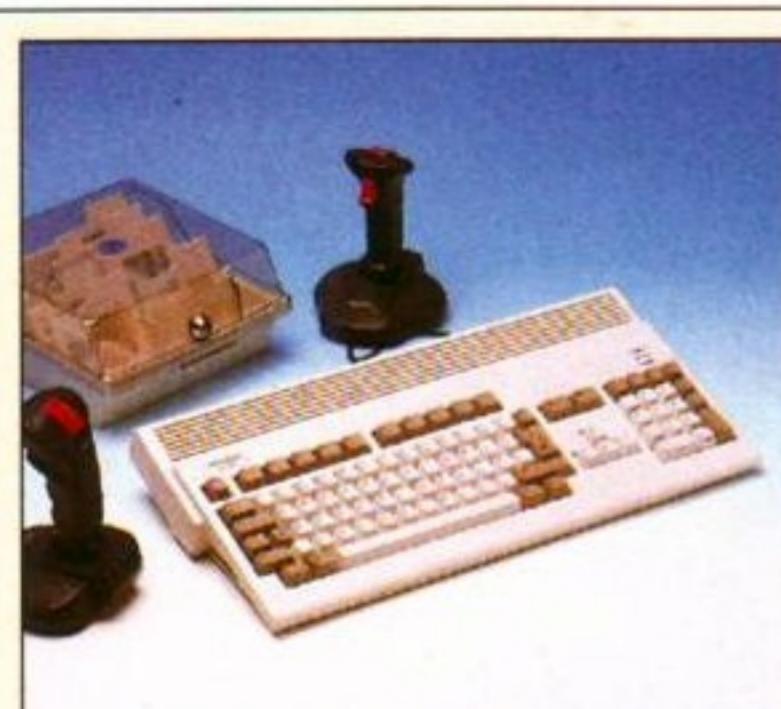
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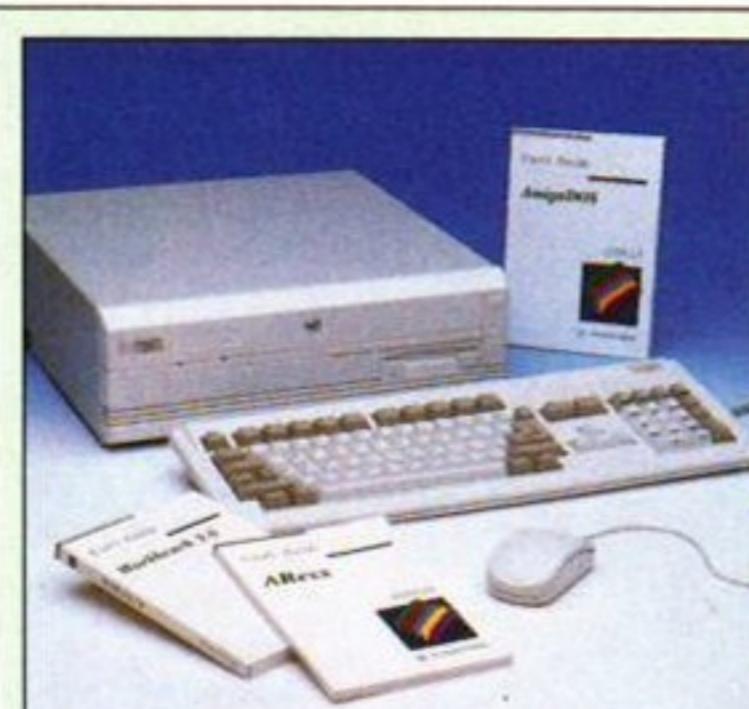
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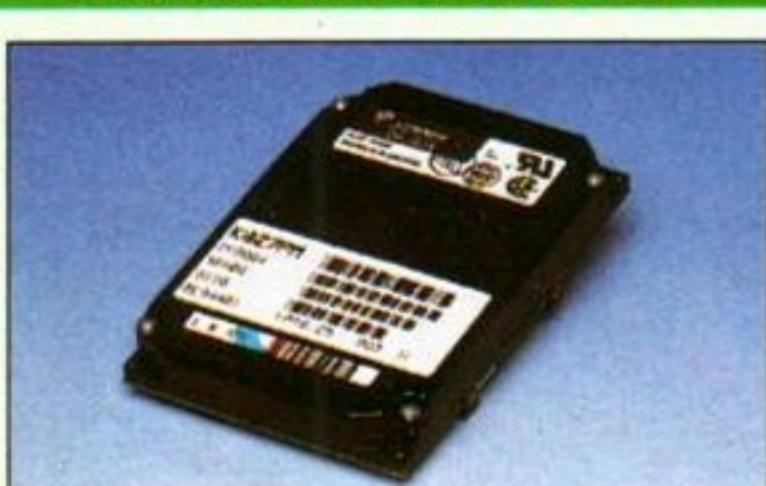
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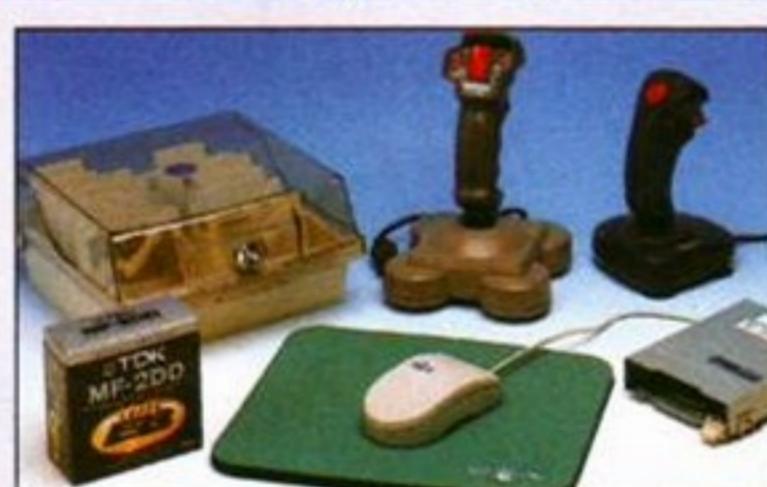
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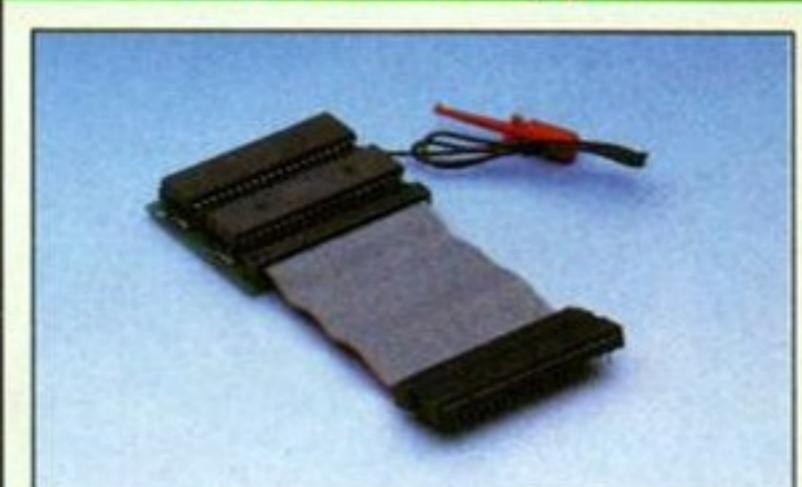
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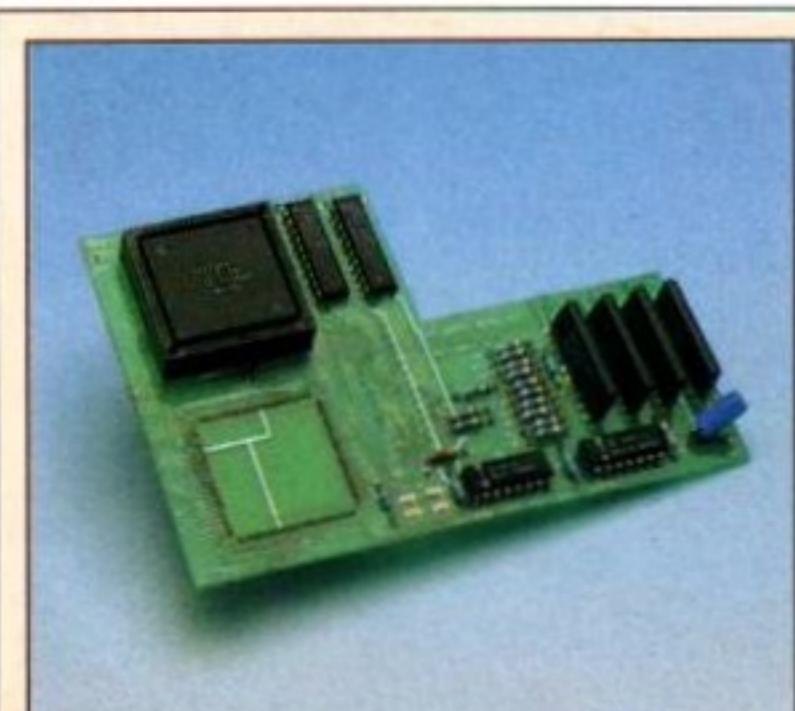


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Please call

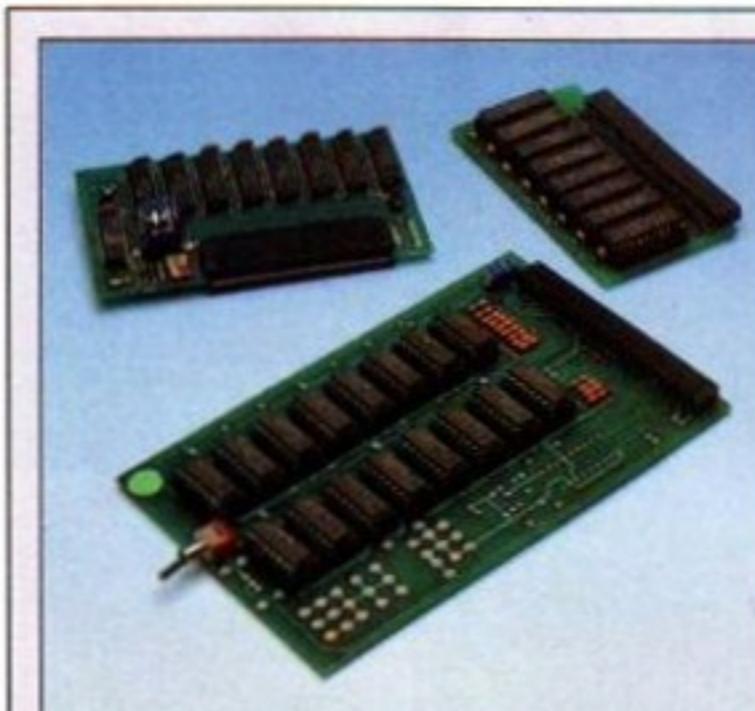
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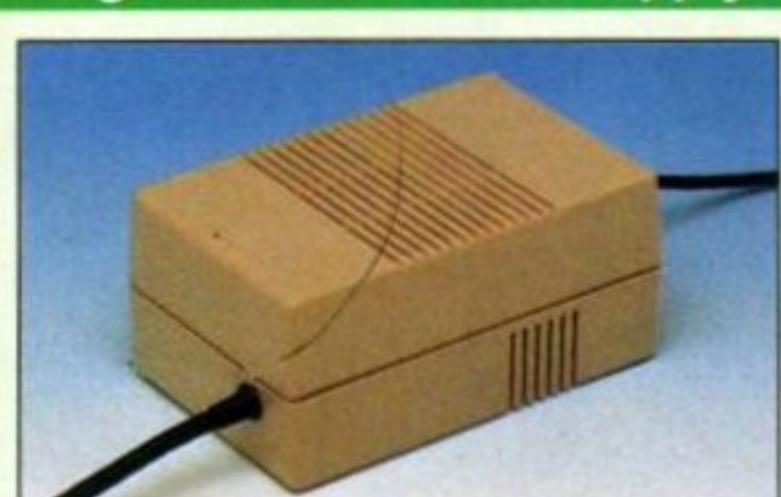
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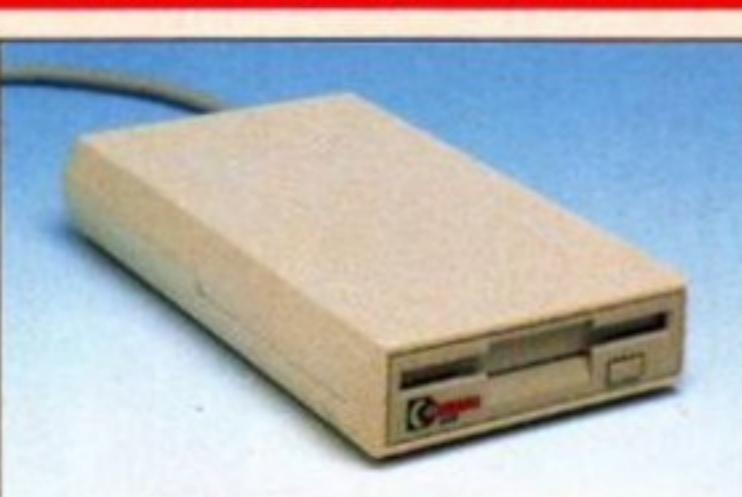
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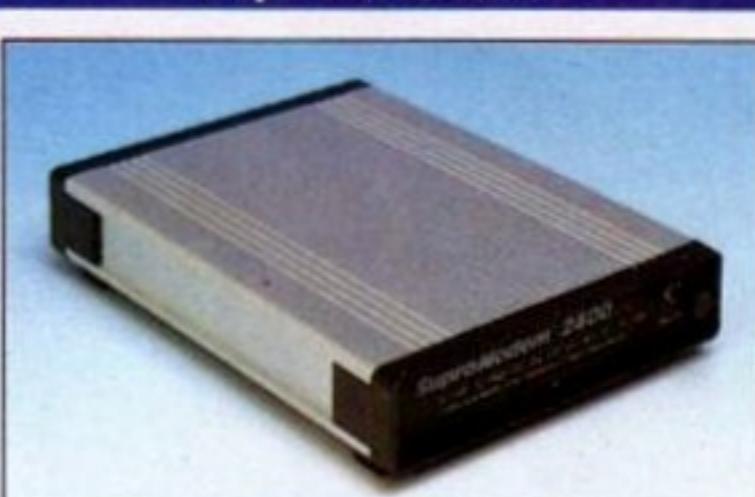
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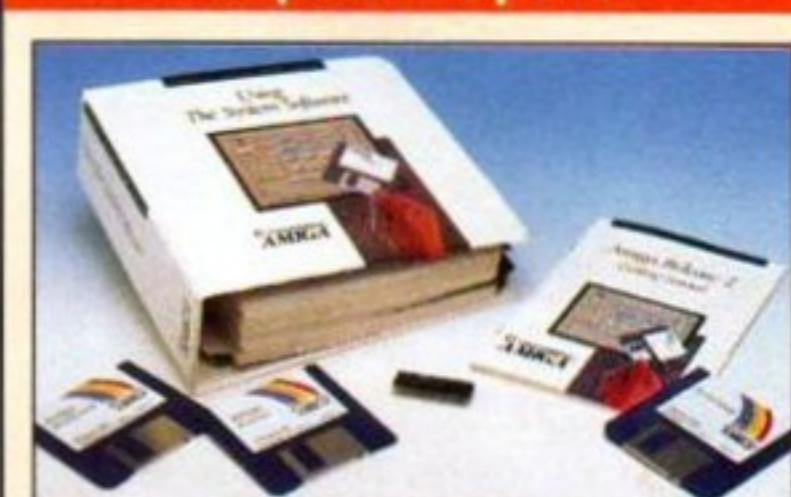
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- WTS have sole distribution rights from Americas biggest Commodore chip distributor
- Workbench 2.04 Kit (Includes manuals, disks & chip) £78
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Screen shots taken from the Amiga version



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NEWS

brief

MORE SCANNER SUPPORT



American company ASDG continue their support for Epson and Sharp scanners.

ASDG are continuing developing for the Amiga market and have increased their scanner support via *Art Department Professional* by adding the Hewlett Packard Scanjet IIc to the existing drivers for Epson and Sharp scanners. Also coming soon from them will be an updated version of *CygnusEd*. For further details call Meridian Software Distribution on 081-543 3500.

MIDI FOR HUMANS

is the title of a planned series of video tutorials from RTPS systems. Aiming to be the 'industry standard to which everyone will turn' for MIDI information and advice, the course is designed to span the full gamut of MIDI usage. The project is in planning, and anyone wishing to discuss ideas or sponsorship should contact Robert Treen on 0869 278470.

VIDEO TIMELAPSE

Optonica have a product designed to help create timelapse videos. It uses a point and click interface to offer control over single frame video photography. An interesting feature is the hardware trigger which allows frames to be recorded when triggered by anything from a disk being inserted to motion, heat, light or sound by using a system of external detectors. We'll be putting it to the test as soon as we can get our hands on one. Optonica - 0455 558282.

MORE SIMPATICA

Not satisfied with producing the preferred single frame rendering system among Amiga professionals, Optonica have now improved it. *Simpatica 2* is AGA compatible, and has a new 24 bit rotoscoping feature. This allows images to be single frame digitised to disk, and then manipulated in Amiga graphics packages, allowing T2 style video morphing, among other things. An upgrade costs £49.95, the new program £350.

Amiga prices go crazy

AS PREDICTED in last month's issue, the recommended retail price of the A600 has fallen to £199.99 for a stand alone machine and £229.99 for the Wild, Weird and Wicked bundle. The hard drive based Epic pack now costs £349.99 - at this price it has to be worth getting for new users who want more than just a console, but cannot run to the A1200's price range. David Pleasance, Commodore's general manager of marketing said: "We've always striven to make the Amiga 600 a truly affordable machine for youngsters and newcomers to the Amiga world. With this spectacular new price there's never been a better time to be shopping for a home computer."

Existing owners on the upgrade path have been given an incentive too. Perhaps aware of what the A600 price plummet will do to A500 resale values, Commodore have initiated an official trade up scheme. You A500 will now fetch you £100 against the purchase of a new A1200. These deals are available at Commodore dealers now.

On a less pleasant note, the price of the A4000/030, Commodore's best value machine, have risen. It seems they have held the price of the base machine while reducing the standard configuration. £999 now gets you an 80Mb HD and 2Mb of RAM. £1,099 is the new price for the 80Mb model with 4Mb of RAM and a 4/120 configuration will cost you £1,199.

The new base configuration is simply not adequate. An 80Mb hard drive is the minimum we would recommend for an A4000 and 2Mb of RAM can't even accommodate *Art Department Professional*. It is preposterous that Commodore should offer the machine at that spec. Since its release, demand for the 4000/030 has outstripped supply, and it is possible Commodore are capitalising on the new machine's popularity.

Prices of the two existing A4000/030 models have risen, and Commodore have introduced a new base configuration with just 2Mb of RAM.

Cool Spot heads Virgin releases

VIRGIN GAMES HAVE announced a host of new Amiga titles planned for later this year.

The first two are due for release in July. *McDonald's Global Gladiators* is Virgin's second tie-in with the burger chain, and on first sight the colourful graphical style looks more promising than the appalling *McDonald-land* (AF1 - 44 per cent). Also for release in July will be *Apocalypse*, the long-awaited helicopter shoot-em-up developed by Miracle Games. We've played both of them, and they are certainly almost there - look out for reviews next issue.



The spot from the 7-Up logo makes it big at last with Virgin's release of *Cool Spot* on the Amiga.



Mick and Mack are back in *Global Gladiators*, another eco-conscious release from Virgin.

The big news is that *Cool Spot*, the recent hit on the console-toys, is to be developed for the Amiga. Virgin's Caroline Stokes told us: "All I can tell you is the Amiga version will be released for Christmas, and it will be absolutely brilliant." If you're lucky, you might just might, find a Coverdisk demo of the game on the front of our Christmas issue.

NEWS brief

COME TOGETHER

There are a host of user groups on the Amiga scene, and we've just received the first newsletter from a brand new CDTV User Group. If you have one of the shiny black units and want to share your knowledge and experiences with others in a similar position, give them a call on 0785 27059.

24 MOVES

The 24-bit club are on the move. They are now available at 6 Skirsa Square, (Dept AF) Glasgow, G23 5DW.

Their services include free access to backdrop and texture files in numerous different formats, free access to their objects library, free access to their animation library, and an advice service.

They also have a more general Amiga help service, which offers a huge free PD library, a free huge font collection, a clip art collection and a personal advice service (about your machine not your marriage we suspect). Fees are a very reasonable £20 for each service, or £35 for both. Drop them a stamped addressed envelope to the address above for details.

AVEC SOUS-TITRES

Zen Computer Services have developed an Amiga-based subtitling system. *Euro Titler* is for use in off line preparation and on line production, and has been adopted by Granada for their *Disappearing World* series. It offers one or two line subtitles, boxed or unboxed, anti-aliased font support and more. All you need now is a rudimentary command of French and you can convert your bedroom videos to art house movies. Call Zen on 061-793 1931.

KUMA BOOKS FOR STUDENTS

If you need the complexities of spreadsheets and DTP demystified, then give Kuma a call on 0734 844335. They have just published books on both subjects designed to help students get the most out of the specific subject areas.

MERIDIAN GET VISTA

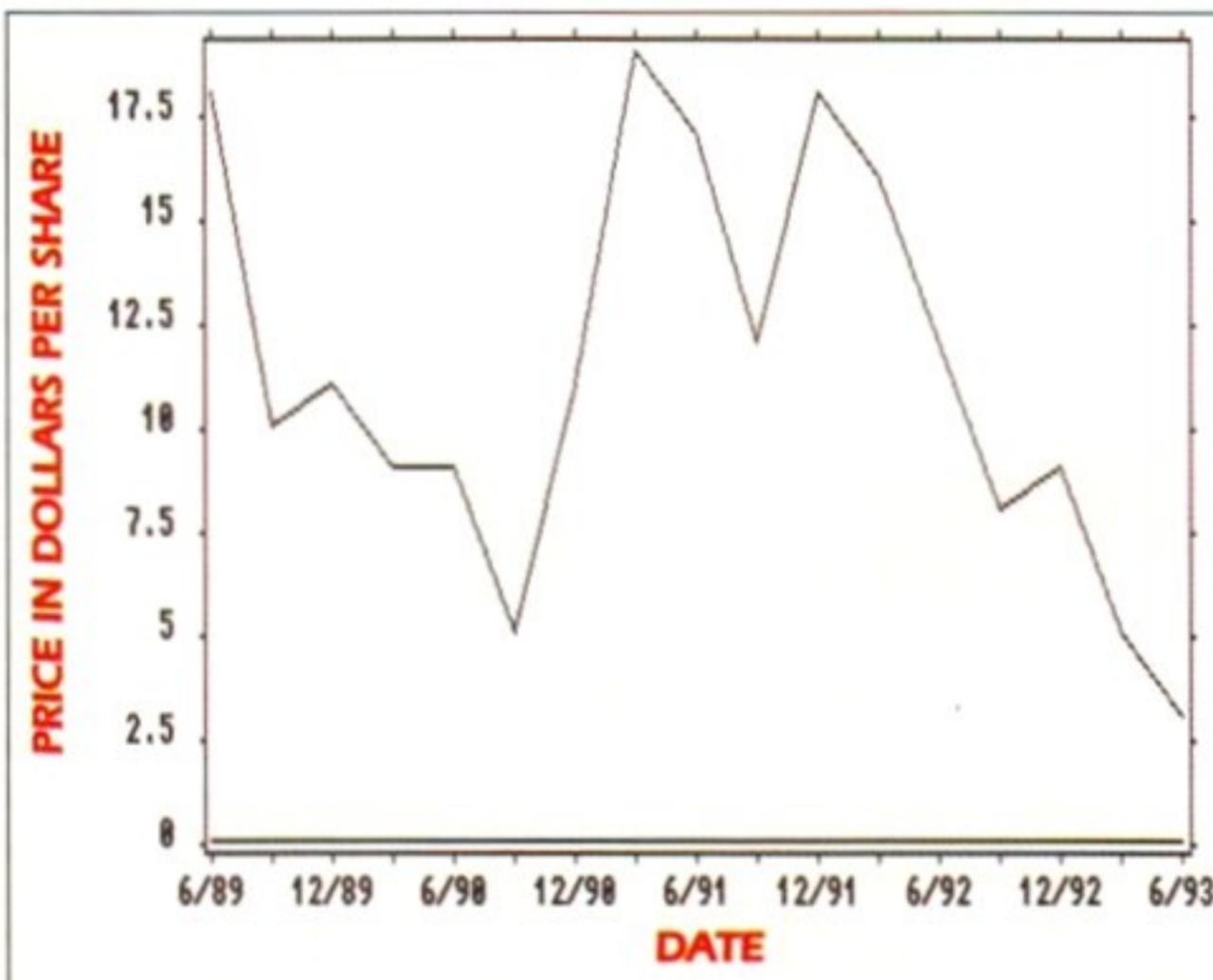
Since the demise of the DMI distribution organisation ASDG and Virtual Reality Labs, products have been taken on by Meridian Software Distribution. ASDG produce *Art Department Pro* and *Morph Plus* and VRL are the authors of *Vista Pro* and *Distant Suns*. All enquiries — phone Rue Luxton on 081-543 3500.

Commodore hit hard times



THE AMIGA'S MANUFACTURER has just announced a global rationalisation program to help them face tough times. Sales of the Amiga have fallen worldwide, with only the UK continuing to offer spiralling success. In Europe Commodore's subsidiary companies in Sweden, Norway, Benelux, Spain and Portugal will be closed. The German office is being scaled down, but the staff there will accept responsibility for some of the countries which are losing dedicated centres of operation.

Although the Amiga has continued to be massively successful in the UK, the strength of the dollar has reduced the value of this market to the America parent company. The rationalisation of operations have helped Commodore avoid 'Chapter 11', the American equivalent of calling in the receivers. Financial backers are now confident that the company is in a position to forge a financially successful future.



The Amiga is very successful in the UK, but the strength of the dollar has reduced the value of this market to Commodore US.

Sony buy Psygnosis

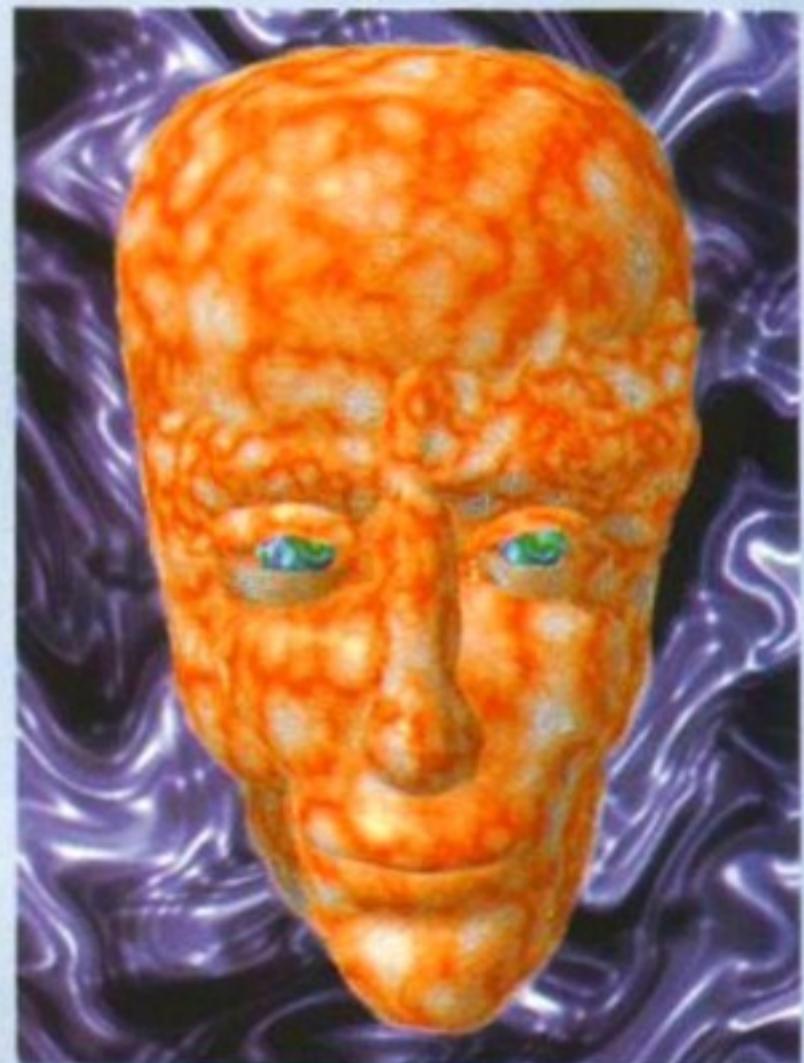


WHILE MANY OF you will be familiar with the act of purchasing computer games, it's unlikely that any of you will have bought an entire software house. But that is exactly what faceless, international megacorp Sony have just done.

And not just any software house either, but our very own Psygnosis, distributor of the holy *Lemmings*.

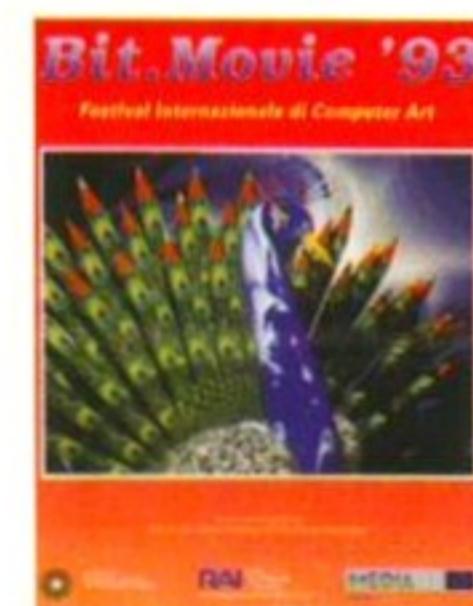
Sony have been active in the acquiring of software creation companies in a number of media. Sony's acquisitiveness may be attributable to the failure of their Betamax and DAT formats, which suffered at the hands of Film and Record companies who failed to offer support to the formats. Sony subsequently bought huge amounts of the world's audio-visual media companies. Their interest in the field of computer leisure software could well presage their diversification into this field. Sony last dabbled with the computer market in the early Eighties with the MSX standard, but the market has raised in profile considerably since then, and many electrical companies are now reappraising it.

Raving w



Max Headroom goes rave on Hex's Amiga generated *Chaos* videos.

See the sights



You've read the report, now see the video.

Bit.Movie '93

Festival Internazionale di Computer Art



RAI

MEDIA

IF YOU couldn't make it to Bit.Movie this year, you don't have to miss out on the sight (and sounds) of the best in Amiga animation. You can flip to page 26 for a start, but if you prefer your animations to be of the moving variety, you can buy the videos from Bit.Movie. There are two tapes, the real time 2D and 3D anim, and the Video categories tapes. They cost \$32 each and are available from Carlo Mainardi, Via Bologna 13, 47036 Riccione, ITALY, or order by Visa/Mastercard on 010 39 541 646635.

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The scheme is intended to be ongoing, with no set period of operation, but if you're gonna use it, you might as well do it straight away.

Call Tsui Miller on 0460 57152.

're raving

The graphical power of the Amiga is being put to full effect these days in a number of music videos. *Dr Devious and the Temple of Chaos* and *Global Chaos* are just two of the recent rave music videos to be issued which feature Amiga graphics.

Neither of them are as good as PD demos like *State of the Art*, or *Jesus on E's*, but they are worth a look. *Global Chaos* is particularly good, and was created by Hex on the Amiga. They used an A2000, a 1500 and an A4000, plus a CDTV. Rather than cold and clinical 3D workstation bank-advert type anims, Hex do garage/punk/mashed-up/dirty graphix, and they're all the better for it.

So if there are no raves near you next Saturday night, get down the video shop and give one of these a go.

Artist's Image



If you reckon you can draw graphics as well, or better, than this, write to Vivid Image at the address below.

VIVID IMAGE, CREATORS of the amazing *First Samurai*, are looking for good graphical artists to join their team. VI's Mev Dinc told us: "We are looking for experienced good-quality artists to complement our top-quality programmers. A good knowledge of games is necessary, and it's important to have a very vivid imagination."

If you're seriously interested write, including examples of your work, to:

Mev Dinc
Vivid Image Design, 60 Lynton Road
Rainers Lane, Harrow, Middlesex HA2 9NN.

OCEAN SEX FIEND

The soundtrack for the next game from Ocean and Digital Image Design, *Inferno*, will be composed and performed by the 'legendary group' Alien Sex Fiend. The soundtrack will be specifically for the CD version of the game. Ocean will be releasing Open Golf Championship simultaneously for both the A1200 and A500. Expect a full review next month. Ocean are on 061-832 6633.

New Amiga rumours abound

YOU WILL ALL have heard, by now, of the new Amiga CD console. But rumours are now circulating about a new Amiga to be launched before the end of this year. The machine will be, it is said, much closer to the specification many people expected from the A1200.

Commodore have been surprised by the uptake of the A1200, and even more by the number of A1200 owners who go on to accelerate and expand their machines. The new Amiga, thought to be called the A1400 will offer a slightly higher specification than the A1200. The discontinuation of the A600 should see the entire Amiga range being AGA machines, with the A1200 as the base model.

The 1400 is expected to be cased in a very small box and will still be 68020 powered, but will probably offer a higher 25MHz (or even 28MHz) clock speed. A high density disk drive and PCMCIA slot will be featured. The case will allow space for 3.5-inch IDE drives to be used, and a 3.5-inch drive bay will allow CD-ROM/SyQuest drives to be fitted. The keyboard will be detachable. Standard configurations are said to be 4Mb RAM/80Mb hard drive. Price? Around £600.

MicroProse in space...



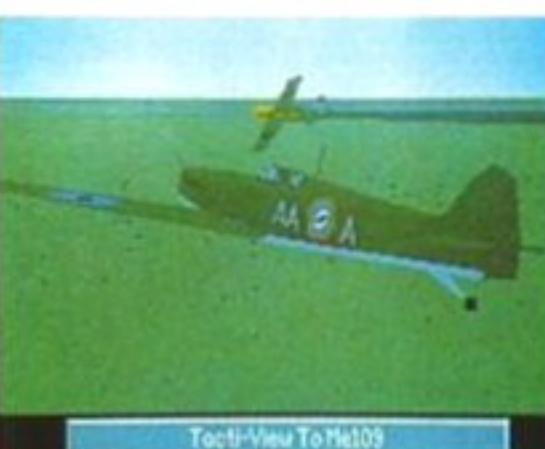
Become Emperor of the Universe in MicroProse's next mega release.

well over over 1,000 stars, MicroProse reckon this is going to be something of a challenge. Not to *Amiga Format* readers, though, we reckon.

Also due from MicroProse is *Dogfight*. Not surprisingly, this is a dogfighting simulation, where you will be able to select from a range of planes: from the Sopwith Camel to the F-16A Falcon. A dogfight between WW2 aircraft and modern day jet fighters is an interesting prospect – but you'll have to wait until later on this year to get your hands on these games. MicroProse 0666 504326.

FOLLOWING THE EXCELLENT *Gunship 2000* (see page 90), the next game from MicroProse is a futuristic space adventure in the style of *Elite*.

Starlord follows a science fiction storyline, where you must work your way from a lowly Lord up to Emperor of the Galaxy. Since the Galaxy contains



Don your goggles and flying helmet, and take to the skies with MicroProse's *Dogfight*.

Only Stupid People Don't Subscribe

A quick poll of the *Amiga Format* office staff reveals that if we didn't work on the magazine then we'd all subscribe to *AF*.



That's because from this issue on, subscribers receive an extra disk every month packed with the best utilities, fonts, and all sorts of other stuff. And that's not all (it wouldn't be, would it?), subscribers also get an extra news letter telling them what goes on behind the scenes at *Amiga Format*, and a full set of instructions on how to work the subscribers disk. If you think you're missing out, and unless you subscribe you definitely are, turn now to page 150 and get yourself in on the deal of the century.

Pretty trees and flowers



ARK SOFTWARE, WHO produce the *Plants for all Seasons* database (AF48 – 90 per cent), are to avail their huge library of plant images to the public. The images are derived from original 18-bit scans and are available in various formats

(HAM, IFF, JPEG, TIFF, GIF, PCX) on either Amiga or PC format floppies. The list of plants is huge, and they're continually updating it. Images cost between 20p and 60p each, depending on size, plus the cost of disk and postage. Call Richard Howe on 0983 551496.

Haven't heard of Edge? You soon will do



FUTURE PUBLISHING, MAKERS of *Amiga Format*, are about to launch *Edge* – a magazine dedicated to the future of videogaming. *Edge* isn't like other games mags; in fact, it's probably the first magazine of its type.

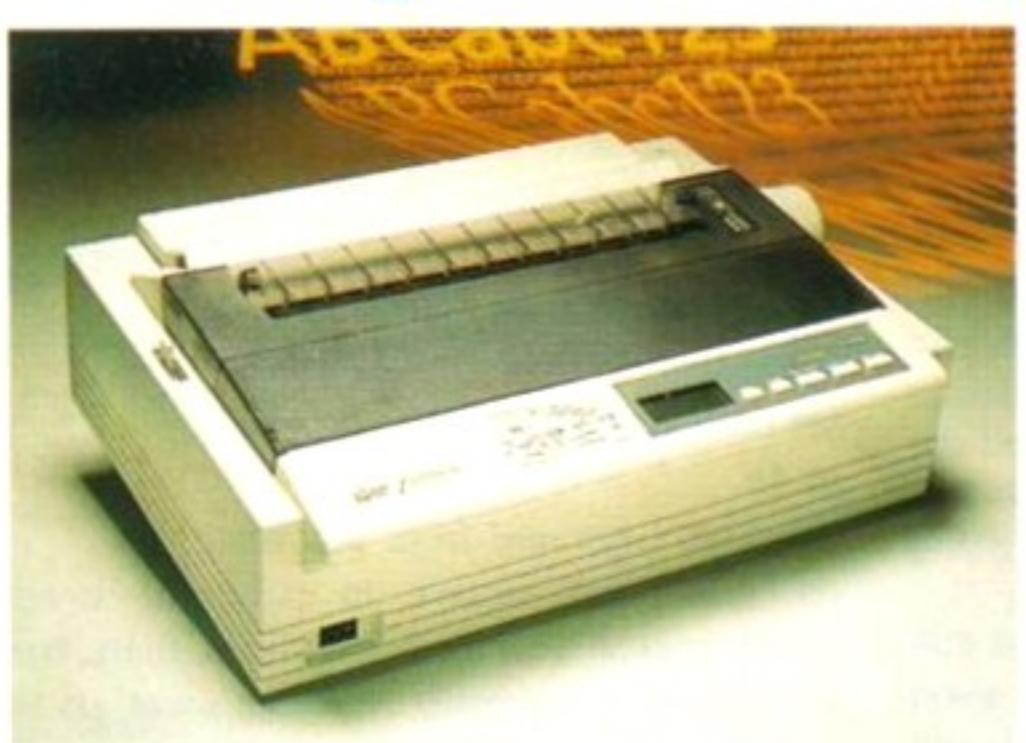
It doesn't do playing tips, it never has any cover-mounted stickers or disks, and it only reviews the cream of video games. *Edge* will be covering the very best of Amiga, PC, Sega and Nintendo as well as new developments like CD-

ROM, 3DO, VR and beyond. For the first issue, *Edge* is looking to hear from the most serious videogamers: if you have anything to say about games, the state of gameplay, the prices of carts and CDs, what you think the future will be, write to *Edge* at: 30 Monmouth Street, Bath, Avon BA1 2BW.

Send your nominations for best/worst Amiga graphics and sound, best/worst Amiga gameplay, most over/under-rated Amiga game. And if you think you can play games, let *Edge* know.

There won't be many magazines about, so make sure you get down to the newsagents on August 19 or you simply won't get a copy. And then you'll be less well informed than anyone who does.

Peripheral price bonanza



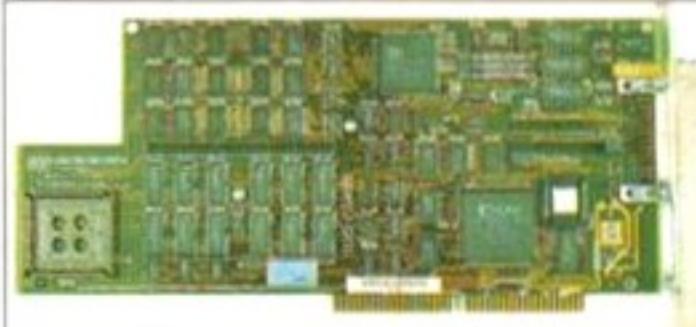
There's no better time to get a printer for your Amiga, and this Star 24-pin dot matrix is down in price at the moment.

120Mb GVP HD8+ for £399, an 80Mb GVP A530 Turbo for £599 and a G-Lock genlock for just £299. Call Silica on 081-309 1111 for more details.

IT MAY BE the recession, it may be the quiet summer months, but something's in the air, and it's bringing prices down. Star have cut the cost of their two most popular printers. The 9-pin LC 100 Colour is now £199 plus VAT, its bigger brother the LC 24-200 is down to £333 plus VAT. Call Star Micronics on 0491 577057 to find out where to obtain these printers.

The stunningly wonderful 24-bit card OpalVision is down to £549.99 with *OpalPaint II* and manuals, and with *Imagine II* it's a bargain £599.99. If you want more colour in your life call Indi on 0543 418079.

GVP products are showing price rationalisations across the board, giving users the chance to snap up deals like a



OpalVision is down in price from £599.99 to £549.99. It's a summer bargain.

Virgin gets Acclaim



Streetfighter 2 and Body Blows, both were excellent, but can Mortal Kombat beat the pants off them? Find out in November.

VIRGIN GAMES HAVE just signed a deal with softies Acclaim, to develop and market Amiga versions of their games. These include *Terminator Coin-op*, *Crash-Test Dummies*, and *Mortal Kombat*, which the console-types are currently calling a *Streetfighter 2*-beater. All three games are pencilled in for release in November. More details as they come in, and it looks likely that *Amiga Format* will be bringing you an exclusive Coverdisk demo of *Mortal Kombat* prior to its release.

While we're on the subject of Acclaim, some of you may be wondering what happened to *Krusty's Super Fun House*, which was reviewed back in AF43 (85 per cent), *Alien 3* (AF45 - 70 per cent), and *Bart vs the World*, a demo of which appeared on the cover of AF43. Well, the answer is they haven't been released

yet. Although the games have been complete for months, there have been delays in getting the software on to the streets. The three games will now be released in November through Virgin Games.



It's been in the arcades and on the consoles, now *Terminator Coin-op* is making its way to the Amiga.

The war continues

FAST, THE FEDERATION Against Software Theft, have co-operated with New Scotland Yard's Metropolitan Police Computer Crime Unit on a major bulletin board bust. They state that "A 19-year-old man was arrested in connection with the alleged unauthorised sale of computer software. It is also alleged that the pirated software was of a sort not yet generally released in the UK."

FAST chief executive Bob Hay adds: "Bulletin Boards have been responsible for creating an open forum for computer users to share a wealth of information and ideas. Unfortunately, as with all great ideas, there's always a group of people with a vandal mentality that will look to ruin things."



Andy Braybrook – programmer and bloody nice bloke.

If you're a software pirate you may think you're a new age Robin Hood, and that you are ripping off vast international corporations, but you are not, you are hitting the livelihood of people like Andy Braybrook, Jon Hare, Mev Dinc, Peter Molyneux and Eric Matthews, who are good blokes. And you are spoiling it for us, so stop it!

CURLY RETURNS



The loveable Mr Curly returns in another puzzler. Can it beat Pushover? Wait and see...

ONE STEP BEYOND, the new game starring Quavers dog Colin Curly, is due to hit the Amiga at the end of July. The game is the follow-on from *PushOver* (AF38 - 86 per cent), though *One Step Beyond* doesn't contain any dominoes at all. In fact, it's a maze/platform game, with 99 levels, which Ocean promise will be the most addictive game of the year. Ocean 061-832 6633.

NEWS brief

LAND OF THE RISING AMIGA

If you want to contact Japanese Amiga owners, or share your PD demos with users in the land of the rising sun, you should get in touch with...

Rick Gardaya
PSC 78 Box 3876
APO AP 96326 USA.

Rick has just started an organisation in Japan who aim to publish a magazine called *Amiga Rising*, aimed primarily at American forces personnel who are stationed overseas. We say 'a big hello' to all such people.

Amiga Rising are looking to have a regular PD/Shareware column, and will review demos and utilities much like we do here in AF. They are especially interested in European demos and music modules, because as you know, we make the best. If you have anything to submit, send it to...

Steve Vanderhoef
PSC 78 Box 2999
APO AP 96326 USA.

WANT A BIG RAM?

Golden Image have seen what all the other companies have done in the way of A1200 RAM expansion, and then gone one better. They have just launched a 9Mb card. Prices start at £115 for the basic 1Mb unit and extend to £439 for a 9Mb with a clock and 33MHz 68882 co-processor. Call 081-365 1102 for more details.

REPRESENT YOUR COUNTRY

If you've read the piece on Bit.Movie and think you can do better, why not prove it. Another Italian computer art organisation, Tecropolis, is looking for entrants to their Pixel Art Expo Roma 93. The finals are in Rome in December, and unlike Bit.Movie, there are categories for computer music too. All entries must be real time, not recorded on audio or video tape, and must be submitted on disk. The prizes will be awarded for innovative solutions, technical and artistic accomplishment.

If you fancy your chances write to Associazione Culturale Tecropolis, Viale Gorizia n. 20, 00198 Roma, Italy for a full set of instructions.

ABANDON FORT

Clive Fort, ex-technical support manager of Commodore, has just been appointed senior producer at software house Mindscape. *Amiga Format* wish him good luck in his new venture.

This Ain't No Game

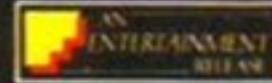


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PRODUCED BY JAKE EBERTS AND ROLAND JOFFE DIRECTED BY ROCKY MORTON AND ANNABEL JANKEL

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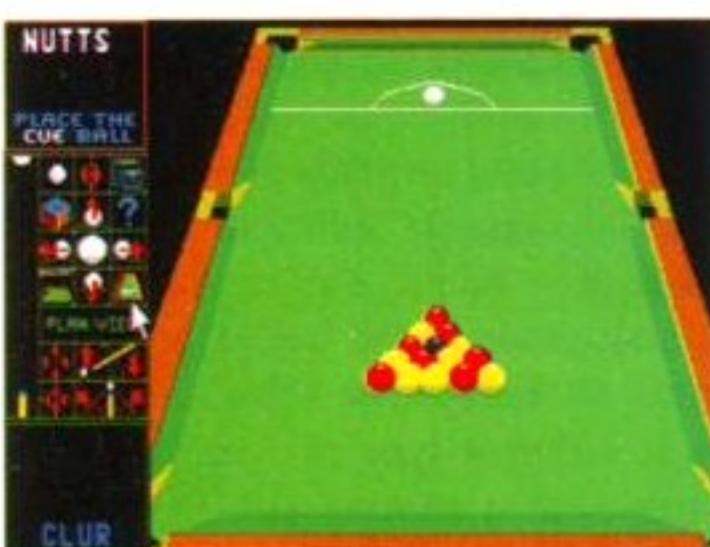
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IN ASSOCIATION WITH
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OF SCOTLAND

A1200? Balls!



Archer's come up with the goods for A1200 owners. Now you can play pool and snooker on your super-Amiga!

ALL YOU A1200 owners who have Jimmy White's Snooker or Archer MacLean's Pool can now rest easy. Archer's been busy tweaking these games and has come up with versions of which work quite happily on the new machine.

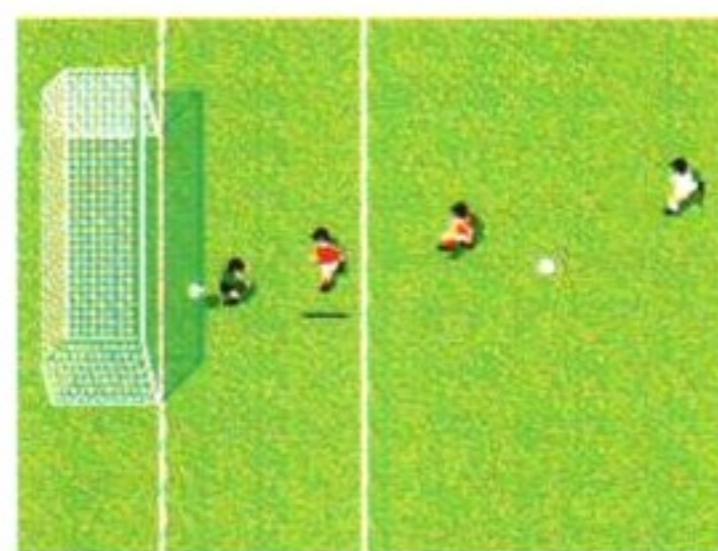
"The older versions of the game ran in 25Hz mode for most of the time," Archer told us, "except when there were loads of balls on the screen. The A1200 versions run in 25Hz mode all the time, so they look a lot smoother." Expect the games to hit the shops in early July. Contact Virgin on 081-960 2255 for details of a possible upgrade service if you already have an original game.

GOAL!

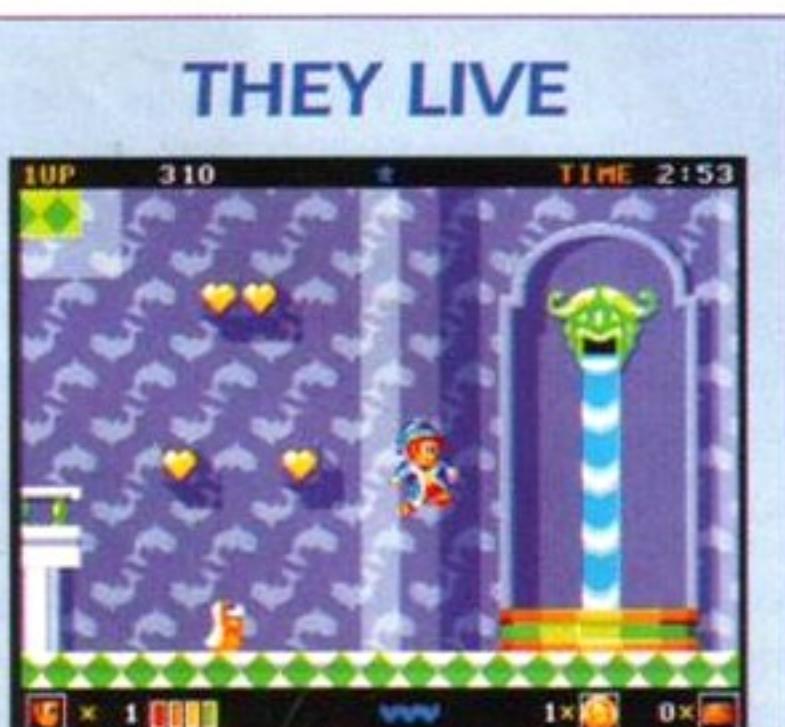
FANCY YOUR CHANCES at *Goal!*? Then go into one of the 14 Game Ltd stores around the country between July 22 and August 21, and you will get the chance to enter a competition sponsored by Virgin Games (081-960 2255).

The overall winner will receive an all-expenses paid trip for two to next year's FA Cup and Coca-Cola Cup finals. Also included is a trip to see England play Poland in September this year, although at the time of writing England are so abysmal this doesn't offer much of an incentive.

Also on offer are loads of Adidas goodies, so everyone stands a chance of winning something (apart from England, that is). Virgin say there's no obligation to buy *Goal!* at the stores, but if you do you'll receive a free joystick.



Read our *Goal!* review on page 66, then nip into Game Ltd and have a play.



Woody's been turfed out of DMI, but Kompart kindly offered him a home.

DMI ARE NO more, but their forthcoming games *Woody's World*, *Nippon Safes Inc.* and *Donk!* will still live on. They will now be released through Kompart UK, who act as a distributor for quality German software house Blue Byte. Contact Kompart on 0727 868 005 for further details.

AKIRA GAME IMMINENT



Akira & co coming to an Amiga near you.

details next month. ICE 0453 756 993.

ICE, makers of *Abandoned Places 2* (see Gamebusters) and *Fire Force*, have the world-wide licence for the Japanese cult film *Akira*. Full

Darling bugs



The Bug: beloved joystick of the *Amiga Format* offices is to be given the face-lift it deserves. The only decent summer bug to have.

THE CHEETAH BUG (£14.99) is reborn! Cheetah, the recently relocated joystick makers, told AF this month that they are planning to relaunch the Amiga gamer's best-friend, in some wacky new forms for the summer.

New MD Jay Protheroe told us: "We're going to give the bug chrome eyes and a choice of four different sticks" There will also be a solid plastic base and some new colours for the Bug - we've already seen the green 'n' red version. Other good news from Manchester-based Cheetah (061-7077080) is that the universally disregarded Charaktersticks are to be dropped in favour of some playable sticks. For more joystick info turn to our essential joystick round-up starting on page 60.

This month's top 30



1(-)	New	Desert Strike	Electronic Arts	87%
2(1)	▼	Body Blows	Team 17	87%
3(2)	▼	The Chaos Engine	Renegade/Mindscape	FG90%
4(4)	■	Premier Manager	Gremlin Graphics	87%
5(-)	New	Reach For The Skies	Virgin	FG90%
6(5)	▼	Sensible Soccer 92/93	Renegade/Mindscape	80%
7(6)	▼	B-17 Flying Fortress	MicroProse	FG91%
8(3)	▼	Lemmings 2	Psygnosis	FG94%
9(7)	▼	Superfrog	Team 17	85%
10(9)	▼	Streetfighter 2	US Gold	87%
11(-)	New	Championship Manager 93	Domark	82%
12(14)	▲	Wing Commander	Origin/Mindscape	83%
13(10)	▼	Sleepwalker	Ocean	FG91%
14(11)	▼	Formula One Grand Prix	MicroProse	FG92%
15(17)	▲	Nick Faldo's Golf	Grandslam	FG90%
16(-)	New	Graham Gooch Cricket	Audiogenic	78%
17(16)	▼	Graham Taylor Soccer Challenge	Krisalis	82%
18(15)	▼	Monkey Island 2	US Gold	FG95%
19(12)	▼	History Line 1914-1918	Blue Byte	FG94%
20(26)	▲	PGA Tour +	Electronic Arts	Comp
21(22)	▲	Indiana Jones - Fate of Atlantis	US Gold	FG92%
22(21)	▼	Civilization	MicroProse	FG94%
23(-)	Re	Rome AD92	Millennium	77%
24(28)	▲	KGB	Virgin	FG91%
25(18)	▼	Abandoned Places 2	ICE	87%
26(29)	▲	Legends of Valour	US Gold	FG91%
27(27)	■	International Rugby Challenge	Domark	16%
28(25)	▼	Zool	Gremlin Graphics	FG95%
29(20)	▼	John Madden American Football	Electronic Arts	FG94%
30(-)	Re	Archer MacLean's Pool	Virgin	89%

Following a storming success with *Sensible Soccer*, those Sensible boys are at it again, adding the finishing touches to their latest game.

Andy Nuttal pays them a visit, and, quite literally, gets blown away...

Fodder for thought...



The crack Eagle pairing take out the Hun, while Pete and Tiger rush to back them up. But where are the Panther boys? Off having a fag, no doubt...



Snake are obviously the hip and trendy group to be in. Stoo seems to be on his own in Eagle, but then he's got three stripes so he should handle it.

"THERE'S NO BLOOD, no death. It's all about Curly Wurlys and oranges," Jools, one of Sensible's programmers, tells me about their new creation, *Cannon Fodder*. With tongue heavily in cheek, he goes on to describe further how this new game contains no violence, absolutely no gore, and how it is packed to the gills with nice things like chocolate bars and fruit.

Ever get the feeling you're being stitched up? The name *Cannon Fodder* suggests elements of war and strategy, and since Sensible Software are trying to build on the success of their previous game, *Sensible Soccer*, a game about food may not be their best step.

In reality, there isn't a sniff of Curly Wurlys or oranges, and more than a hint of blood and death. *Cannon Fodder* is an arcade game, yes, but one which involves you taking a troop of five soldiers through 72 war-style missions.

You take control of the men using your mouse, and the screen follows you around the terrain. The highest ranking soldier leads the pack, or you can split the team into several sub-groups and control each one separately. The other groups don't move, but they do automatically defend themselves when attacked.

Alongside the enemies, lying in wait for your soldiers are a plethora of obstacles, including snares, traps, mines and holes in bridges (which caused much hilarity in the Sensible office as I innocently led my five-man team to an untimely end via a hole in a rope bridge).



Fortunately you can always find something to help you, whether it be crates of grenades or rockets, or vehicles such as a jeep, tank, skibob, snow tank, or a helicopter – simply hijack them and use them. Some missions also require you to locate civilians and rescue them, and to make sure they don't get hurt.

The missions are split into five different terrain styles – Jungle, Desert, Arctic, Enemy Base (underground), and what Stoo, the artist, describes as 'Emmerdale Farm'. Each terrain brings a different type of enemy, including cannibals with a cooking pot, Eskimos who make holes in the ice for fishing, gunslingers who can turn on you at the drop of a hat, a meths addict, rats, exploding sheep and booby-trapped seals.

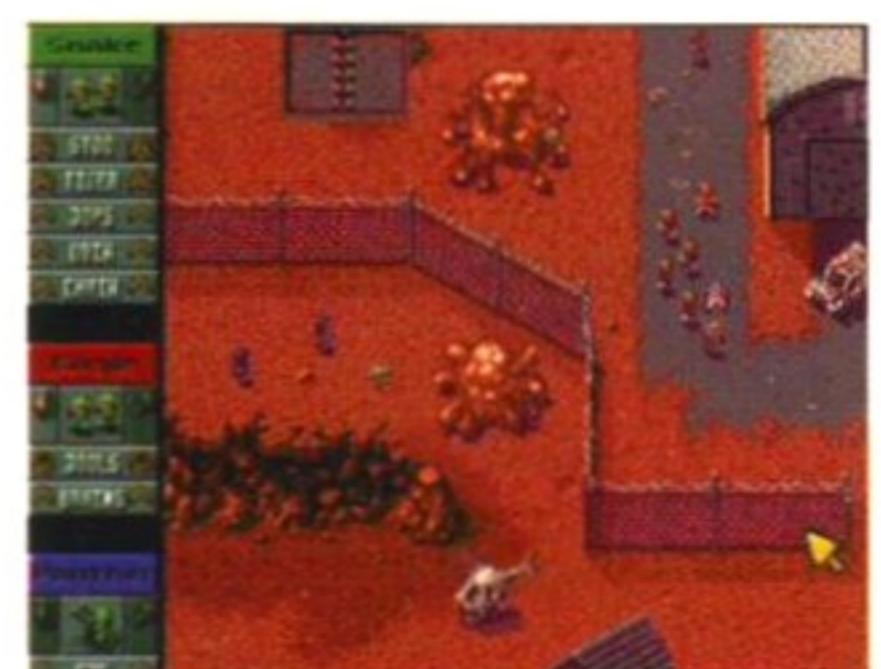
According to Jools, the latter two enemies work in a similar way: "You will see lots of seals lying on an ice floe. If you walk up to them, they will all jump into the water apart from one, which explodes on closer inspection." Er, yes.

The sound effects suit each terrain style, and are amazingly lifelike and clear – especially the jungle sounds, with parrots and crickets creating a really eerie atmosphere. As you move nearer the source of the sound, the effects get louder, which is a neat touch. The sampled effects for the weapons and soldiers also add a lot to the atmosphere – these are some of the best sound effects I've heard from a computer game.

On a more serious note I asked Jon Hare, Sensible Software's top man, what, if anything, *Cannon Fodder* is based on: "It's based on all wars ever," he says. "We're not concentrating on a particular war because it's meant to be an anti-war thing."

This is echoed by Stoo who says: "There's a danger if people buy it as a wargame, because the arcade elements come first." It's not all trivial, though, because at the end of every mission you get a roll of honour for those soldiers who survived, and a memorial list of those who died, naming each one in turn. This actually makes you feel guilty, and the onus is on you to make the others survive the next mission.

To find out what *Cannon Fodder* is like for yourself you'll have to wait until September, when it will be released through Virgin Games. I can't wait.



Our men go for an all out desert strike – the guy in the helicopter has different ideas, however.

Sense and sensibility



If you look closely, you might just be able to make out the Sensible boys above. Camouflage, you see. Cunning.

Although Sensible Software's first game was officially *Parallax* for the Commodore 64, Jon Hare had previously worked on several games for the Spectrum including *Skyfox* and *Flyer Fox* for EA. After scoring a hit with the brilliant *Wizball*, the team turned their hands to other projects including the god-game *Mega-Lo-Mania* (AF26 – 91 per cent), and the completely loopy sequel to *Wizball* called *Wizkid* (AF37 – 93 per cent). Although *Wizkid* was raved over by the computer press, the game didn't sell very well at all – a mystery for such a great game.

Sensible's biggest success story to date, however, is *Sensible Soccer* (AF36 – 91 per cent) – to date it has sold over 120,000 copies on Amiga alone. Now developing *Soccer* for other platforms, Sensible Software look set to go from strength to strength.

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85% MacFormat

**"Intriguing, very deep
and absorbing, easy to
use, great fun..."**

85% PC Home



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AE 08

3D modelling is one of the most exciting areas of computer graphics.

From enthusiast to professional, hobby to industry, the Amiga has the subject sewn up. Find out how it's done in our 10 page guide...

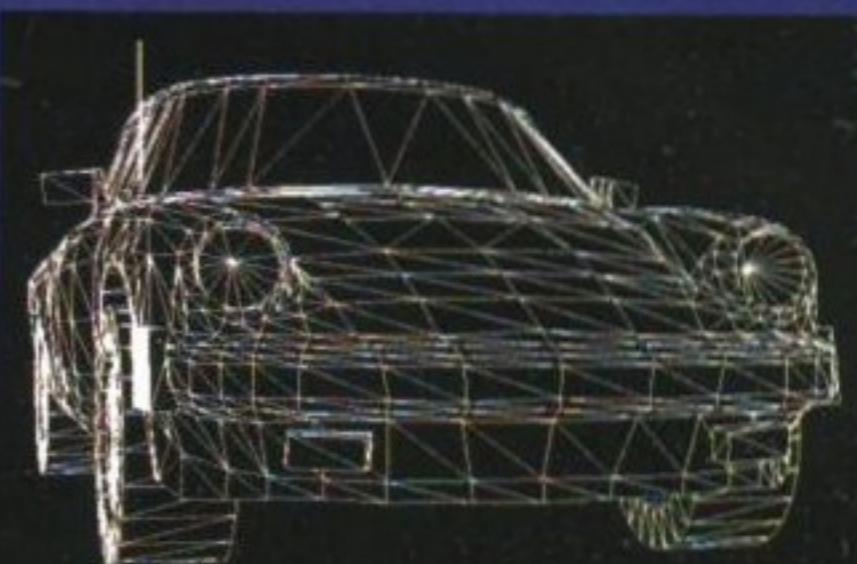
FIRST PRINCIPLES
Get this straight - current screen displays cannot show you a real 3D picture. The closest you can get at present is the W Industries Virtuality system, which sends a slightly different picture to each eye. Instead, computers like the Amiga display a two dimensional image of three dimensional models. Think of it as taking a photograph - photos are 2D, but they show images of the real world.

Two dimensions are built up on an XY grid, but inside the computer, three dimensions (X, Y and Z - depth) are used for frames of reference. Computer models usually

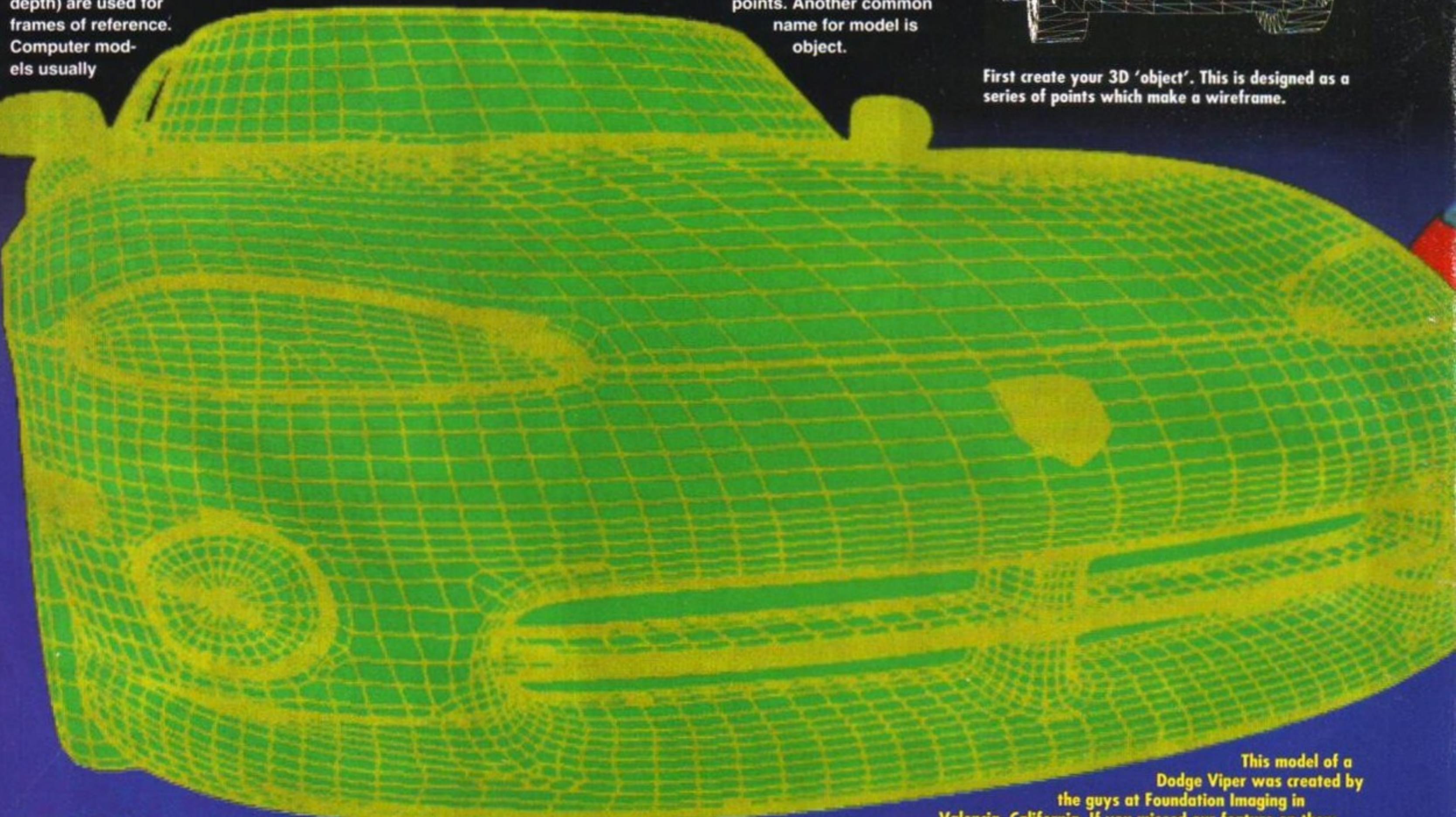
Create new worlds

start off as a solid block, which is gradually refined to a complex, finished shape. Obviously, it takes time to get the models as detailed as possible.

The quality of models is mostly in the hands of the modeller - but some programs have better tools than others for shaving a simple brick with six corner points into something like this car with hundreds of thousands of individual points. Also, a model's complexity depends on how much computer memory is available to store the points. Another common name for model is object.



First create your 3D 'object'. This is designed as a series of points which make a wireframe.



This model of a

Dodge Viper was created by the guys at Foundation Imaging in Valencia, California. If you missed our feature on them and their work on Babylon 5 in last month's issue, get hold of it now.

STAGING

Right, got some 3D models - you now need to position them relative to each other in 3D space. This may seem a daunting task, (imagine placing all the tower blocks in New York precisely) but most people find it easier than the actual model creation.

The reason for this is that most real world man-made objects have a lot of common components - think of all the nuts and bolts in a car, or all the windows on a house. All 3D modelling programs have facilities to replicate models spaced evenly along a line.

Here's an example - Stonehenge. You wouldn't need to create every single individual stone and lintel to make a 3D model of it. Instead, you would do one stone and one lintel. By repeating all the stones around a

circle, and then laying a circle of lintels on top, a computer could produce a stage of the whole stone circle quite quickly. Of course, for that modern look, you would want to misplace a few toppled stones.

One subject we haven't made clear yet is scale. When you create your models, usually they are done on their own true to life scales. When you start creating a scene, however, you can scale models up or down. So you can have giant sized matchsticks or miniature spaceships.

The computer really doesn't mind - size is, after all, relative. However, be aware that the larger an object it is and the closer the viewpoint is to it, the more detail it needs in order to look realistic.



Complex models can be comprised of many individual elements.

SURFACE PROPERTIES

The colour of the light rays bouncing around a scene depend on what they hit. Of course, what they hit is just as important to the final picture. Most 3D programs allow you to alter the look of the objects. The simplest way to do this is to wrap an IFF picture file around the object.

For instance, for a wooden object, you would obtain a woody, grained IFF, and then wrap it around an object. If you wanted lots of individual wooden objects, you would need quite a few different IFF wood pictures to wrap around them.

Man-made objects usually look all the same, but if you want a natural, unique looking object, you have to have a unique texture for it.

Some software lets you change the texture of an object; rough or smooth, plastic or metal. Confusingly, the IFF pictures are also referred to as textures, and the fact remains that with just the right picture to wrap around an object, almost any surface is possible.

One final subject

about surfaces is mathematical shading techniques. Phong shading is a maths equation that is used to give a curved, smoothed surface to part of a model that isn't really rounded or regular at all.

Different shading techniques save a lot of work when designing models.



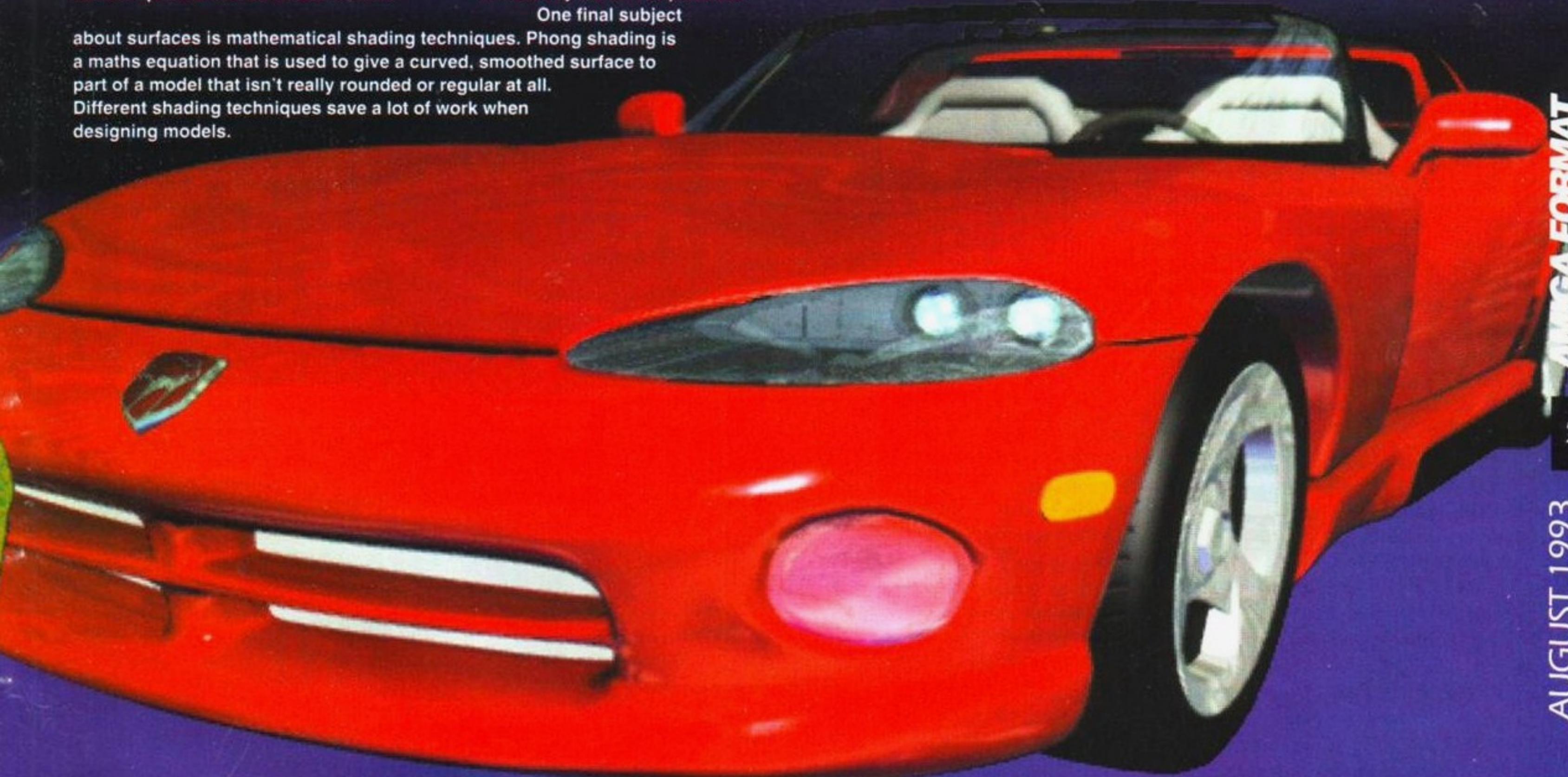
In order to render your object you must give its surfaces qualities like colour and texture.

SOLID VS SURFACE

There are two broad groups of 3D modelling software. Solid modellers deal with whole objects. When building a model, you take a block of material, and cut, drill and chop it to the right size, using a set of software tools. Solid modellers are usually very good at producing curved edges, but as a result they are usually a bit slow.

Surface modellers only deal with the skin of an object. They prefer dealing with straight lines, edges and polygons. One by-product of this is that they are usually faster than solid modellers at creating models, but suffer quite a lot when trying to produce curves. With shading techniques like Phong, these problems can be worked around – but solid modellers still have the upper hand in producing acceptable, natural looking objects.

With sophisticated, very up-to-date programs like *Real 3D 2* or *Imagine 2*, you would be hard pressed to tell which program produced which image. However, when you are actually creating 3D pictures and animations, you have to be aware of the advantages and limitations of the two different types of software.



LIGHTING



Correct positioning of the light sources is vital to a good looking picture.

Lighting is just as important for computer 3D as for photography. Once you have your models placed in 3D space, you usually have to position a number of lights around the scene. That's the easy bit, the difficult bit is getting the colour and intensity of the light correct.

This is only necessary for the ultimate in computer 3D – ray tracing. Once you have set the viewing position, the computer then traces each ray of light from the light sources on to the view display. When it changes direction (gets reflected off of a surface) or changes form (diffracts through water or glass), the computer has to update the ray. One light ray can bounce around a scene thousands of times before it hits the viewing screen.

This is very, very time consuming for computers – literally millions upon millions of calculations are needed. A quick way to render is just to colour in the surfaces of all the objects. However, the results are very poor compared to true ray tracing.

MOVING 3D

Create a scene, move an object slightly, render it again, move, render – this sort of technique is time consuming although quite easy. Just flying 3D objects around a landscape is quite trivial compared to creating realistically changing objects.

Just try lifting your arm out straight. When you move your upper arm, your elbow, lower arm and hand all change position as well. The art of 3D animation is not about zipping objects around, but about carefully calculating all the positions of the components of each object. By the way, don't try this example at home – people (especially faces) are the hardest things to model on a computer.

An easier project would be a set of headlights flipping up from the bonnet of a sports car. The lights are fixed to the car, but can spin around an axis. You just render a frame, rotate the headlights a bit, render, rotate a bit more, and so on. If you wanted a dramatic night time shot, then putting light sources inside the headlamps would create it – although it usually takes trial and error to get it right.

Moving 3D is the probably hardest, slowest, most time consuming thing you can do on an Amiga. It takes days or weeks to create even a few seconds of animation. But the results are used by TV and film companies all over the world. If you're tired of cartoon *Deluxe Paint* animations and want to try something more complex, get stuck into 3D.

Every year the town of Riccione in northern Italy hosts one of the world's most prestigious computer art festivals. Take a trip with us and see how well the Amiga fared at...

Bit. Movie '93

IT'S NOT SURPRISING, given the Amiga's reputation as *the* graphics and video computer, that most of the winners at Bit.Movie have been created on the Amiga. It's even less surprising when you take a look at the list of entries. More than 400 works of computer art were submitted for evaluation this year, and of those over 300 were Amiga works. You and I know how great the Amiga is for painting, for ray-tracing and for animation in both 2 and 3D. But the Bit.Movie festival gives the rest of the world a chance to marvel at the wonders the Amiga is capable of.

And wondrous is the only way to describe these works. To win a prize at Bit.Movie a work must not be merely excellent, it must have that added extra ingredient that distinguishes great art from visual drivel. And, perhaps the most difficult test of all, it must appeal to the public too.

Bit.Movie is held annually in the Italian town of Riccione. This year's festival, the sixth, was held over the Easter holidays in April. During the five-day period of the exhibition over 6,000 fans of computer art attended the show. Three thousand of them filled out ballot forms, and it is from these that the winners have been chosen.

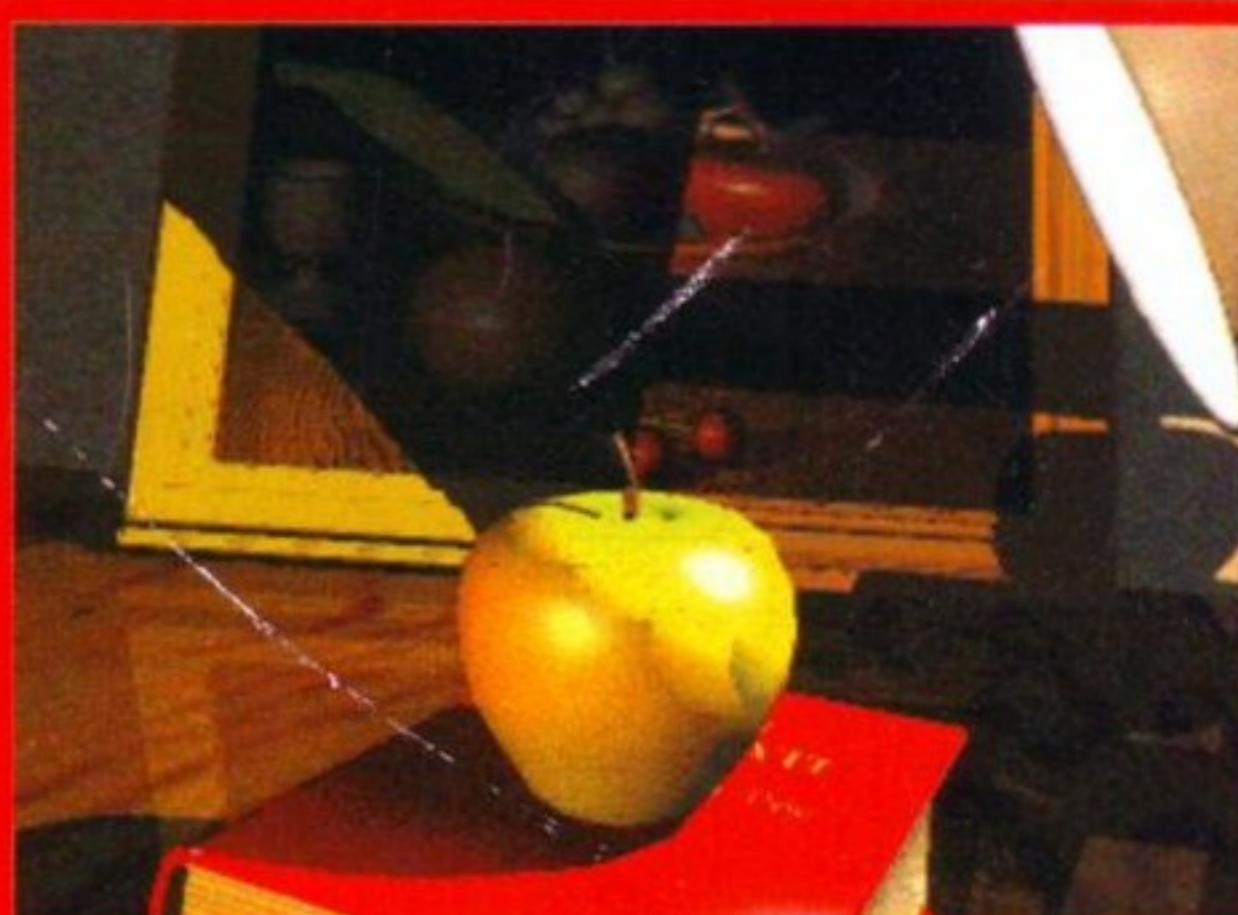
The Awards are split into six categories: 2D images, 2D animations, 3D images, 3D animations, videos created on a personal computer

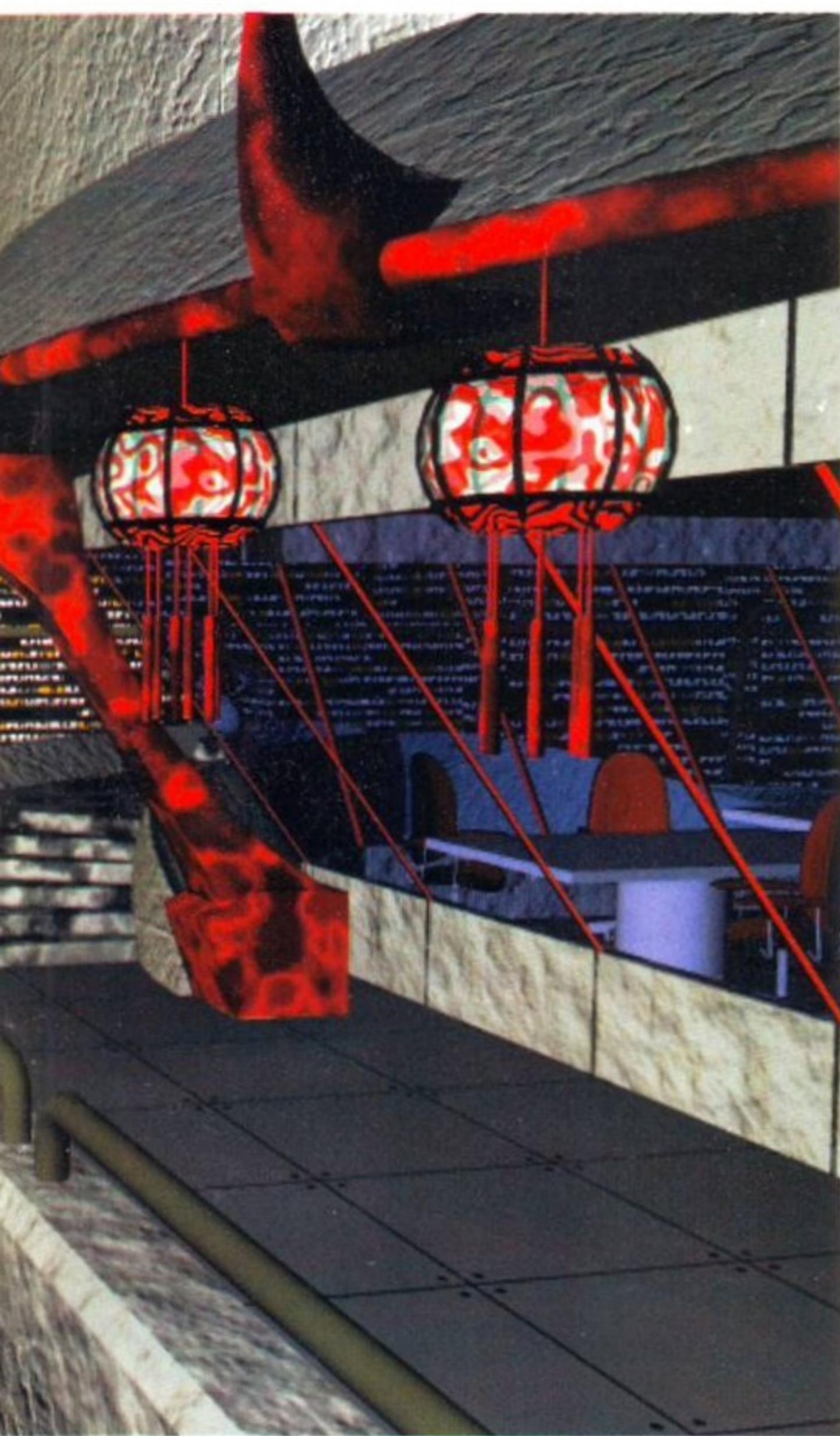
Nippon Riory Ten came top in the 3D static image category. It was created by Saponi Alessandro. The panel of judges particularly liked the contrast between elements of fiction and reality, and the mixture of items from both the future and the past. We like it because it is superbly modelled and superbly rendered.



and videos created on a graphics workstation. The Amiga has shown strongly in all of the five categories it is eligible for. But as part of this ray-tracing special feature we are interested mainly in the 3D categories. The Amiga's domination in these groups is as strong as in the other. Most of the entries have been rendered using *Imagine 2*, with *Real 3D* making the occasional appearance too.

The winner in the 3D still category is Nippon Riory Ten, pictured above. The image was rendered on an Amiga 3000 using *Imagine 2*. The render took four hours, which is amazing when you look at the detail the picture contains. Especially when you consider that it was rendered to a resolution of 2,048 x 1,366 pixels. The resulting bitmap was retouched using *ADPro* and even the humble *Deluxe Paint*.



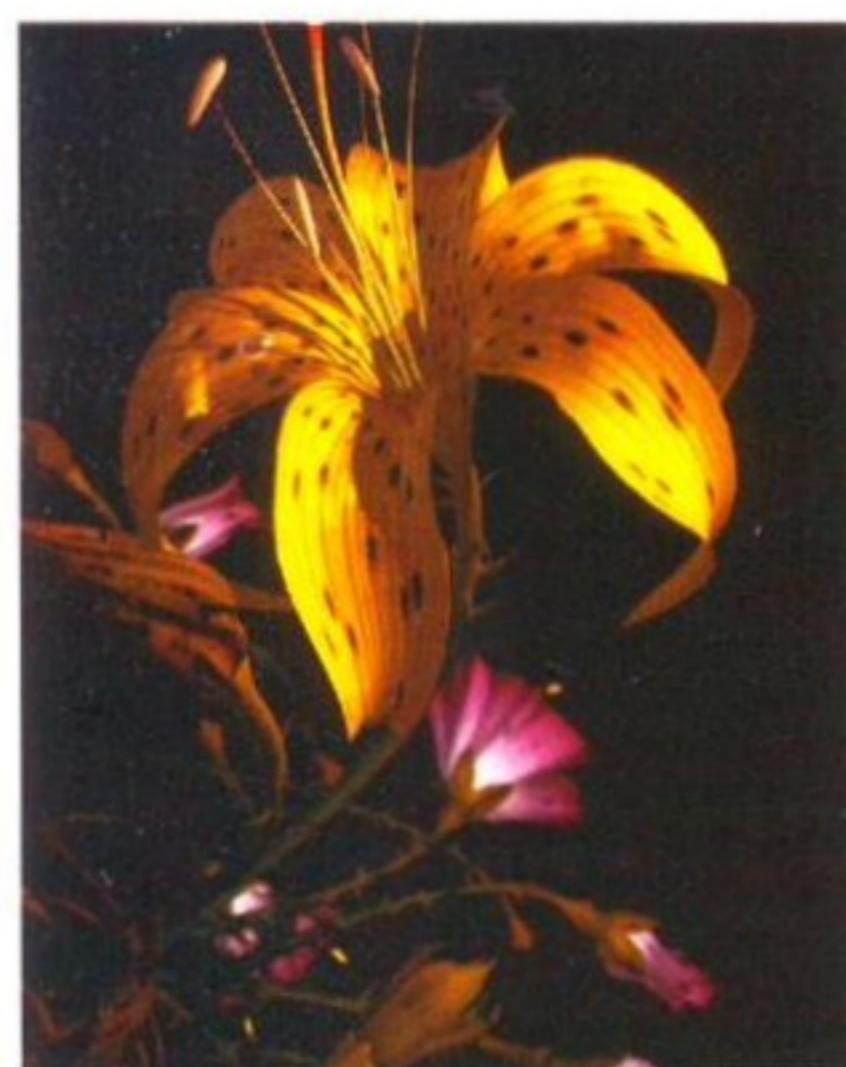


Bit.Movie is an excellent opportunity for the Amiga to do what it does best – graphics – and do it in public. If the Amiga is to continue being taken seriously, events like this are to be encouraged and supported. If you're a graphics wiz, start getting your entries ready for next year's competition. Here at *Amiga Format* we'll be keeping an eye on developments in the run up to Bit.Movie '94.

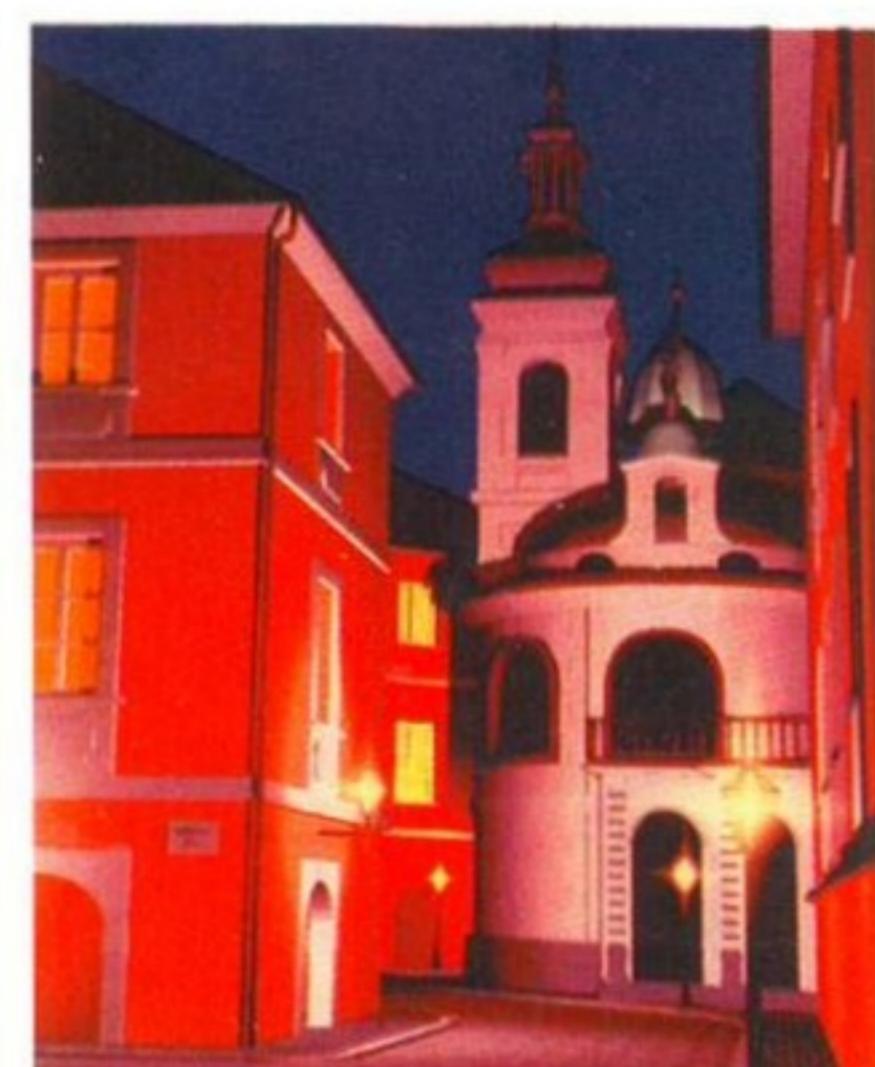
G



in Imagine 2. (Check out the 3D software round-up starting on Page 29.)



Achieving organic forms like this with 3D modelling is the most difficult. This image, entitled *Brightside* by Stephen Menzies, took second place in the 3D still category.



This image, by Paolo Boschetti, is called *Praga*. Although it didn't come at the top of its category, it achieved some acclaim, and was created on an Amiga 500. It took 23 hours to render though!



Encounter by John Rowe walked away with the honours in the 'Video Created on a Personal Computer' category, with a narrow margin over the second placed *Le Miroir Virtuel* by Jean Luc Faubert.

Do your bit for Bit.Movie '94

The images on these pages are the finest, the ones that a panel of expert critics and an interested public chose from the hundreds of entries. If you can do this well, or better, why not enter Bit.Movie 1994?

In this 10-page 3D graphics special feature we show you what 3D ray-tracing is all about, and last month we demonstrated how to do animation. In fact Roddy McMillan, author of last month's animation tutorial, picked up fifth prize at this year's Bit.Movie, so you have had lessons from one of the best. Put it all into practice, and get drawing and rendering. Next year, let's give 'em something to look at in Riccione.

At the '93 festival there have been 111 entries from Italy, 18 from America, 11 from Germany, but only 7 from Great Britain. Let's not get a reputation as people who draw as badly as we play sport.

If you have what it takes, Bit.Movie '94 offers you two opportunities to gain fame. The first is to enter the competition for the 'Placard Image' for next year's festival. This image, which will be used in advertis-

ing for the event, must be 1,024 by 1,024 pixels in size, and be a computer created graphic in some way related to the event. It shouldn't contain the words Bit.Movie, nor should it contain the signature of the artist. These will be added by the festival's designer. Send your images to the address below by 31 October 1993.

The other way to make your impression at Bit.Movie '94 is to enter the event itself. If you are interested you can get a set of rules, by writing to:

BIT.MOVIE '94
c/o Carlo Mainardi
Via Bologna 13
47036 RICCIONE, ITALY

The closing date for entries is 31 January 1994 and the festival itself is going to be held from 31 March until 4 April 1994.

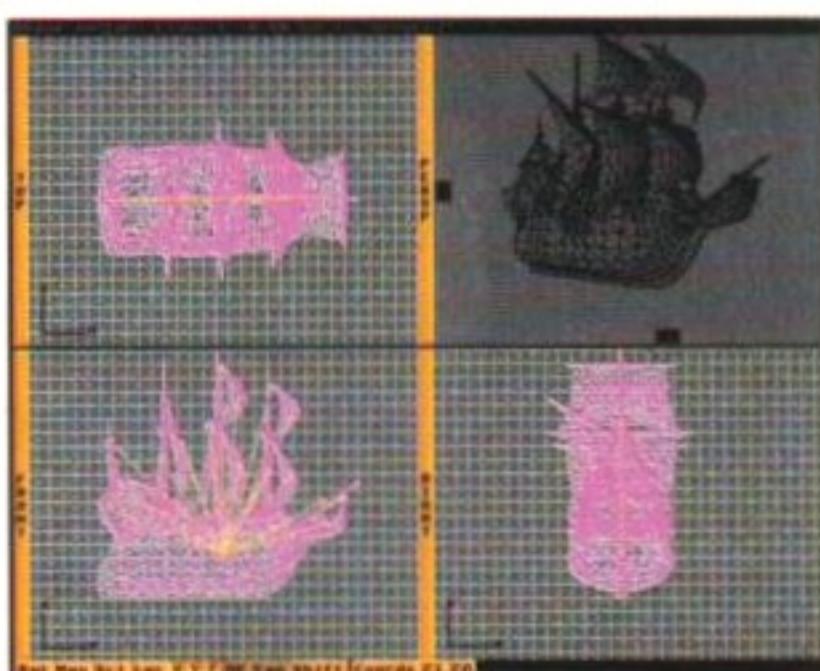
We'll be bringing more news of the event in the coming months, and we'll be reporting on next year's festival from Riccione itself!

PREMIER MANAGER - THERE IS NO SUBSTITUTE!
NOW AVAILABLE ON PC £29.99 ALSO AMIGA/ST £25.99



Imagine 2

AVAILABLE FROM : DMS (0702 206165) £117.50



You too can sail the ocean waves with *Imagine*, one of the first ray tracing programs on the Amiga.

IMAGINE HAS BEEN a favourite with the 3D community since its release in 1991. The previous program from Impulse (*Turbo Silver*) had been widely regarded as very powerful, but extremely unfriendly. This, and other problems, were addressed with a redesign of the interface, and a rewrite of the rendering engine.

Imagine is divided into five sections: the project editor (overall control of the rendering process), detail editor (where objects are created and modified), forms editor (for creating symmetrical objects), cycle editor (for creating regular motions in objects such as walking or flying), stage editor (where objects and lights are placed in an environment) and the action editor, where the movement of objects and any special effects are determined.

This sounds complex, but overall it makes it an easy program to use. This is fortunate, because the manuals are terrible, with no sign of an index. This is unfortunate since many of the best aspects of the program are a little difficult to use, such as the brush and texture mapping. The only alternative is to get Steven Worley's excellent book *Understanding Imagine 2* (Alternative Image - 0533 440041), which explains all aspects of the program in a readable and easy-to-understand manner.

Objects in *Imagine* are composed of points, and the edges and faces between them. You can automatically generate a number of primi-

3D round-up

tive objects such as spheres and disks, and this is often the best place to start when building an object. A variety of tools for manipulating the individual points or the overall object are available, including extruding, skin, conforming to sphere, and *Imagine* can even load in IFF images and convert them into 3D objects.

The combination of the detail editor and the forms editor make creating objects easy, although really complex models can take ages to redraw, even on a fast system. For instance, the model of the Enterprise on this month's cover (see how we did the cover on page 35) is over 1.6Mb in size, and contains several hundred thousand points. This takes over a minute to redraw, but fortunately once the model is complete, you can set it to just draw a box outline of the model, which makes placing the objects in the stage editor much easier.

Imagine is blessed with some excellent animation facilities, including key frame and path based movements. The cycle editor is extremely good for creating actions which repeat, such as the legs when walking or the wings when flying, and once this action has been defined,

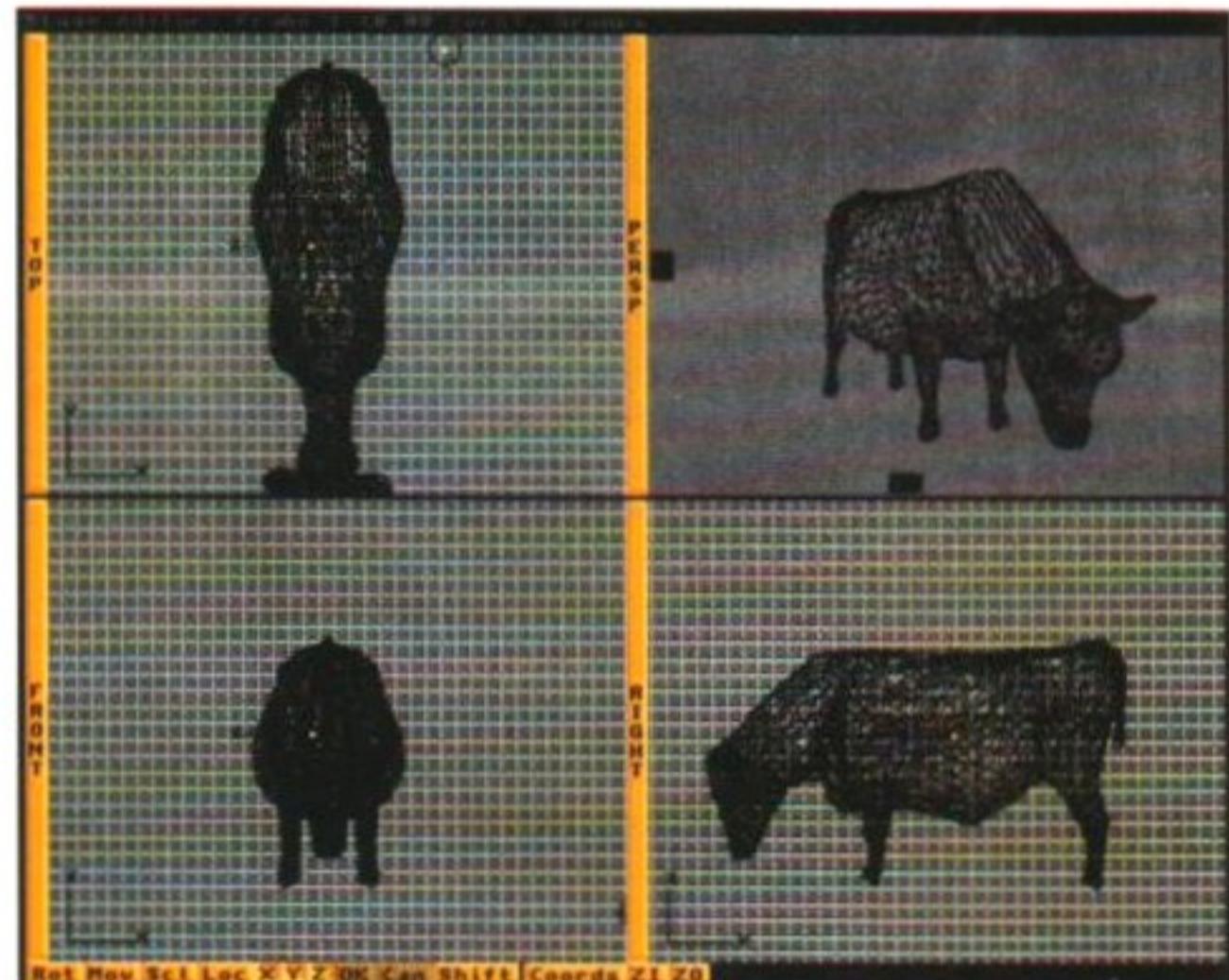
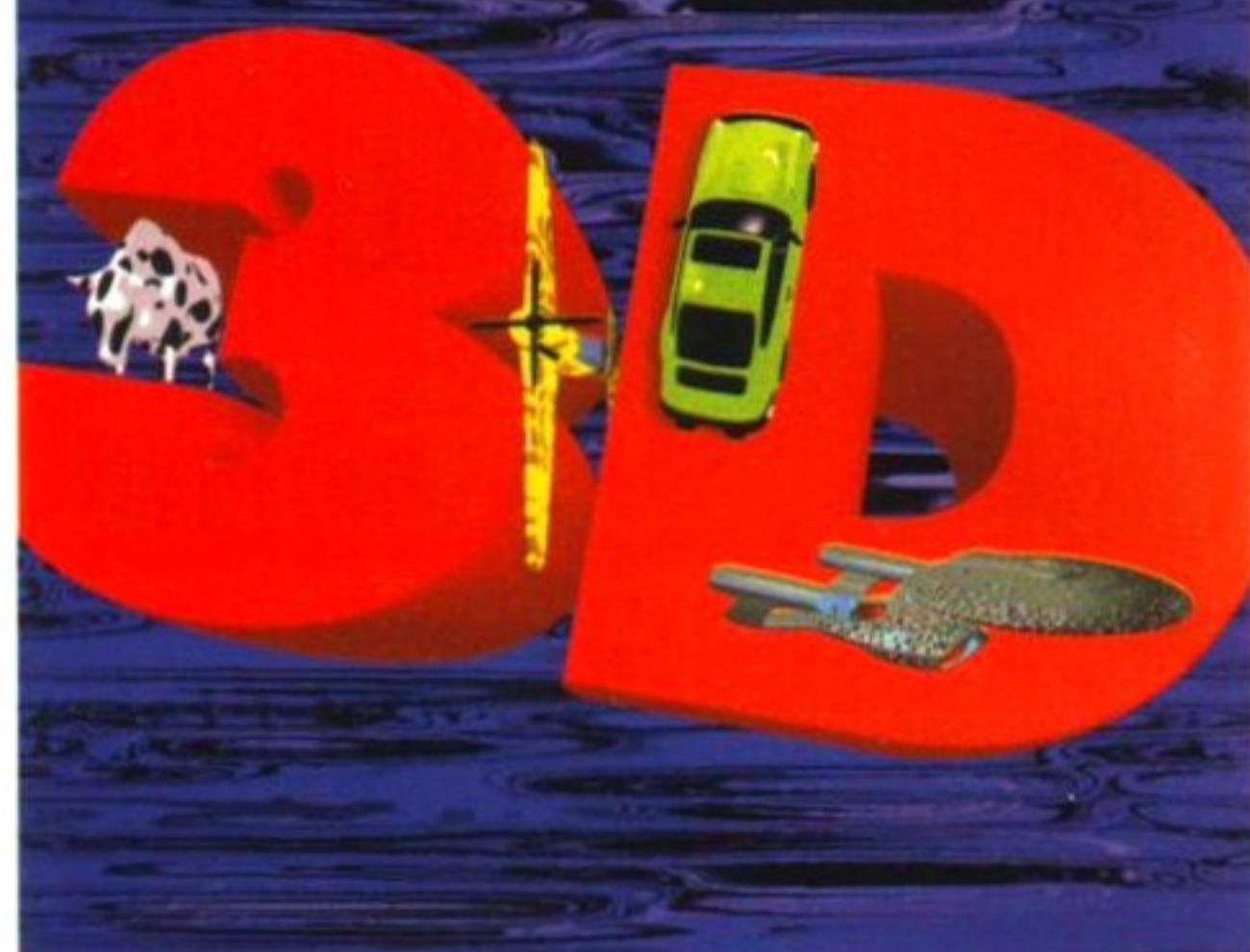
it can be set to run automatically.

Rendering time varies with the mode used and the complexity of the object, but as a rule it's pretty

fast, and the program can generate in all of the normal Amiga screen modes as well as at user-defined resolutions and aspect ratios for use on 24-bit frame buffers such as the Retina and OpalVision card. *Imagine 2* has also recently been bundled with the OpalVision card.

It has been a long time since the last major upgrade of *Imagine*, and rumours abound as to what *Imagine 3* will contain, and when it will appear. Impulse have a policy of not discussing programs that haven't been released, but it is likely they will be trying to recapture some of the ground lost to *Real 3D 2*. It's unlikely that it will be available before the autumn, and even this date is optimistic.

Richard Baguley checks out the main runners in the race for 3D ray tracing dominance.



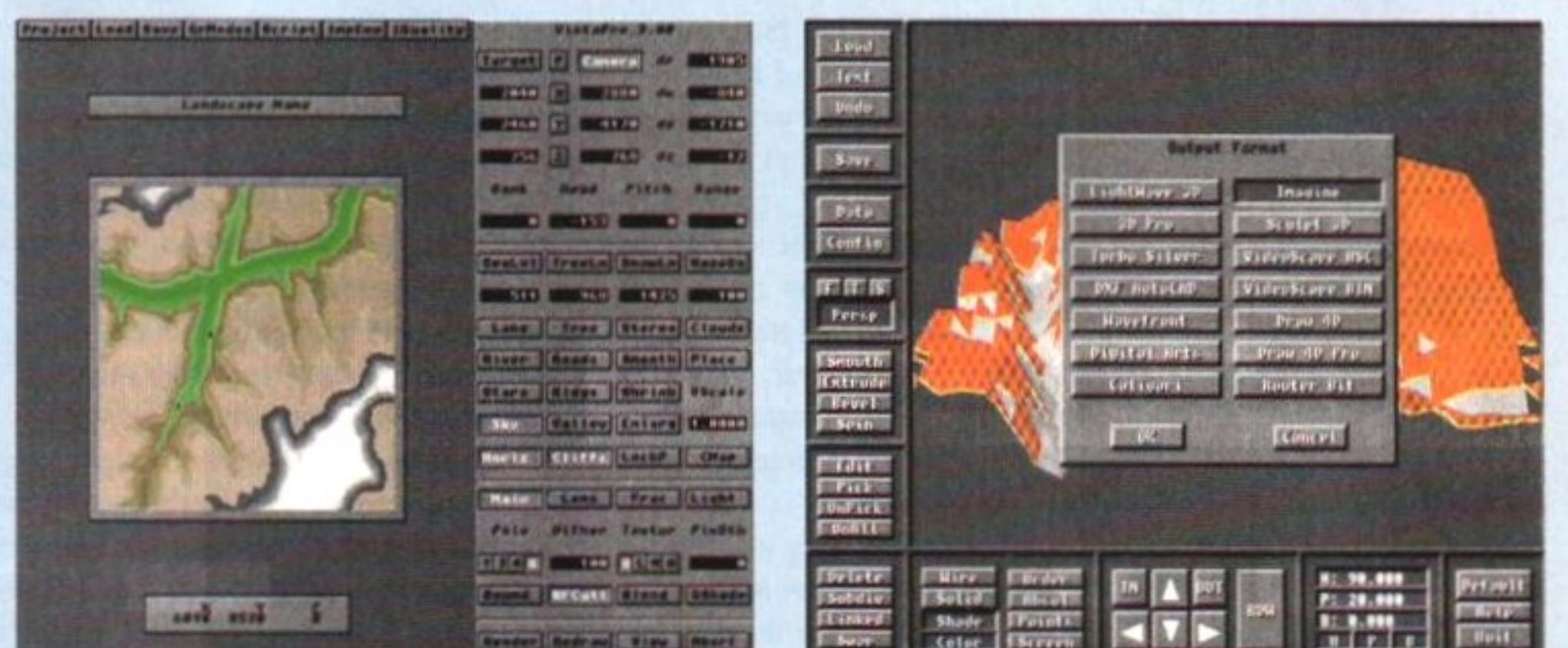
Imagine's four way view can be rather confusing, but manipulating objects is pretty easy once you get used to it.

Vista Pro 3

AVAILABLE FROM: MERIDIAN SOFTWARE (081-543 3500) £69.95

Vista has had a long, distinguished history as one of the best 3D fractal landscape generators, and the latest version carries on this tradition, with a host of new features. *Vista Pro 3* can produce stunning 24-bit images of landscapes for use as backdrops in 3D creations. Version 3 can draw realistic 3D trees on landscapes, add roads and buildings and create animations of these landscapes, which could be combined with a ray traced animation.

Vista is capable of saving the landscapes as *Turbo Silver* objects, which can be loaded by *Imagine*, or converted to other formats by *Pixel 3D*. These objects can look blocky, but all the colour attributes are preserved, so with a bit of judicious retouching, they can look realistic.

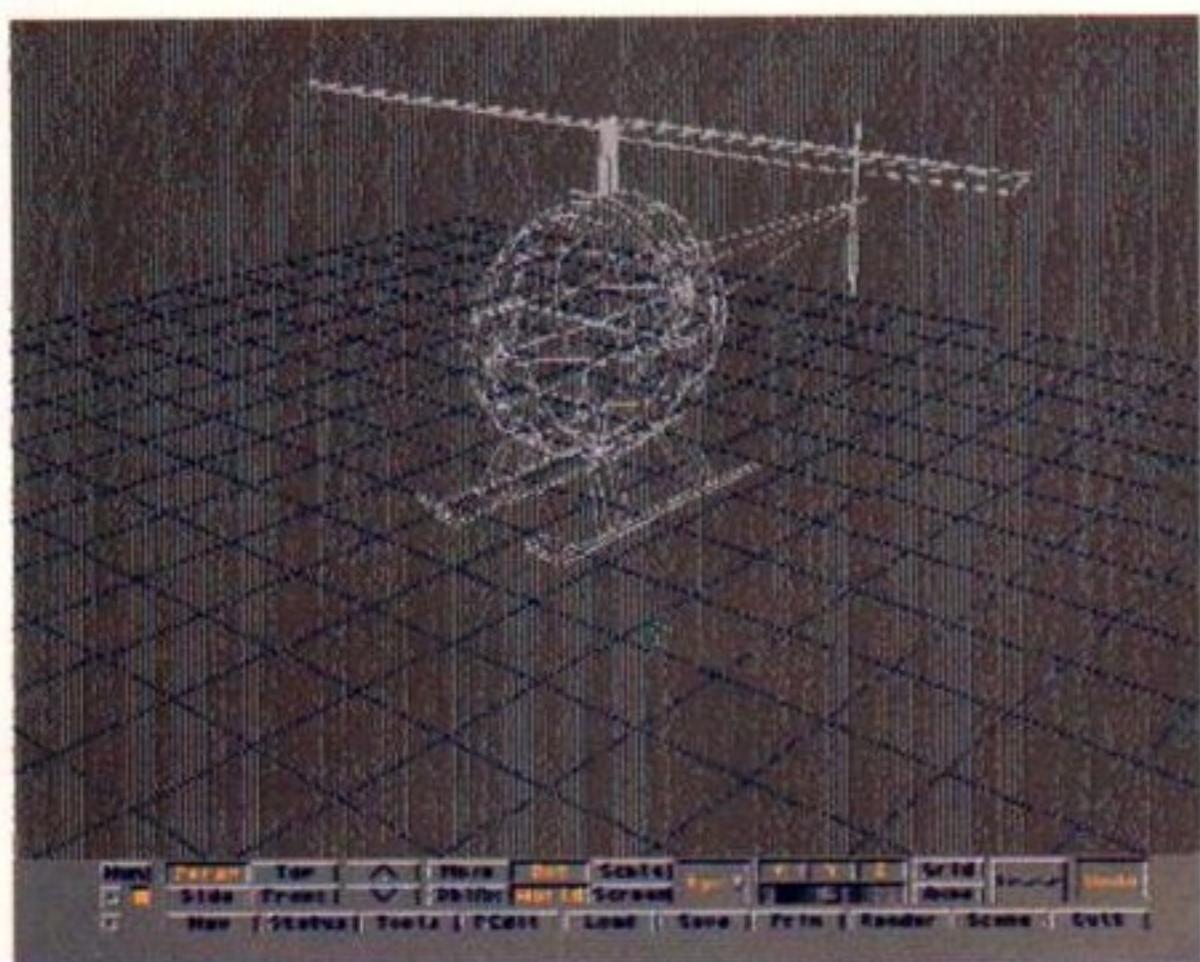


Any section of a *Vista Pro* landscape can be saved out as a *Turbo Silver* object...

...which can be loaded into *Imagine*, or converted by *Pixel 3D Pro* (above) to a number of other formats.

Caligari 2

AVAILABLE FROM: CALIGARI CORPORATION
(010 415 390 9600) \$500



Caligari avoids the tri-view approach to object modelling, and instead uses this perspective view, which makes manipulating objects easier.



Caligari avoids the tri-view approach to object modelling, and instead uses this perspective view, which makes manipulating objects easier.

Caligari was the first true rendering and modelling program on the Amiga, but it never quite got the popular following that programs such as *Imagine* or *Real 3D* attracted. It's undoubtedly an extremely powerful program, with a wide range of features and model manipulation tools. It also has probably the best user interface of all the programs, with easy object manipulation and a viewpoint which allows you to really plan the scene. It avoids the usual tri-plan view by giving a perspective view of the scene from the viewpoint of the camera.

Unlike other programs, when you move the viewpoint, the screen is updated in real time, as the objects are represented only by bounding boxes. However, the problem of losing much of the detail on the objects is far outweighed by the benefit of being able to see the changes in real time. There's also several useful tricks such as a quick render mode, which means that you can get a preview of the scene in a few seconds.

Rendering with *Caligari* is extremely quick, especially on an accelerated machine. However, it doesn't use true ray tracing, so reflections have to be simulated using bitmap and colour mapping on to the surface of the object. Despite this, with care and planning, it is capable of producing high-quality realistic results.

Caligari has never really got the recognition it deserved as a powerful and very easy-to-use program. However, it's recently been given something of a new lease by its inclusion with 24-bit graphics cards such as GVP's IV-24 version 2. When allied with the quality of image you get with 16 million colour images displayed on a 24-bit graphics card, it's capable of producing some excellent results.

Lightwave3D

AVAILABLE FROM: NEWTEK
(0101 354 1146) \$1,899
(WITH FREE VIDEO TOASTER)

First off the good news: *Lightwave3D* is an excellent 3D rendering and animation program, as anyone who's seen any of Todd Rundgren's, Nutopia's, or Ron Thornton's work (to name but a few) will testify.

The bad news: it's only available as part of NewTek's Video Toaster – which of course makes it of little practical value to most of us who live in the non-NTSC world. I truly wish this weren't the case, since I find *Lightwave* one of the easiest-to-use animation packages on the Amiga, and it would probably be my first choice were it not for the fact that I now generally have an OpalVision card in the video slot of my Amiga instead of a Toaster, and that it only outputs in NTSC-size formats.

Now down to business. *Lightwave* has a fairly long evolution previous to the Toaster, having begun life as *Videoscape3D*, one of the first 3D programs on the Amiga. Its author, Allen Hastings, has consistently stuck with the Amiga over the years and the fruits of his labours have recently culminated in the release of *Lightwave 3* (available with the new Toaster 4000), which I have yet to see.

One aspect of this past history is revealed by the fact that *Lightwave* can load objects designed in *Videoscape* format, another in that *Lightwave*'s accompanying

modelling package, *Modeler*, bears more than a passing resemblance to the old *Modeler 3D* program.

The great thing about *Lightwave* is the ease with which animations can be choreographed – simply set up a series of key frames in the layout editor and place the actors, lights and camera where you want them in each key frame, then let the program do the rest. Each 'tween' will be calculated from the key frames and the frames rendered accordingly. You can even construct a wireframe preview and play it back to check how the work is coming along. Moving the objects around is achieved with little more than a few mouse moves, and the camera (and light/s) can easily be made to track any object – and even change targets on key frames.

A whole range of effects is also available – right from texture mapping to fog, and particle systems to time-based effects called 'envelopes', all of which means that some amazing effects can be achieved. In fact, each individual part of an object (and that could be quite a few) can have separate attributes such as smoothing, reflectivity, colour and mapping type attached to it.

Personally I've never been able to get along with the *Modeler* software (right from the old *Modeler 3D* days), and I still prefer to use *Imagine* (see previous page) to make objects and then convert them for use with *Lightwave*, but judging by many of the complex creations flying around in *Lightwave* animations I'm probably out on a

Claymation

AVAILABLE FROM: TRILOGIC
(0274 691115) £TBA

Several years ago, Martin Hash wrote a program called *Animation: Journeyman*. This was capable of producing some excellent results, but its control method and interface was a little, well, odd and rather difficult to get used to.

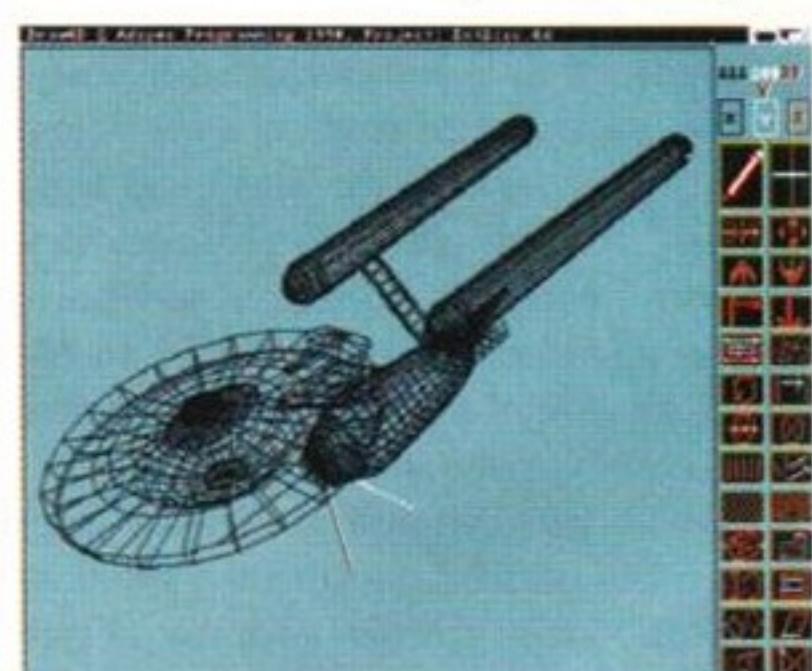
Since then, Martin has been working on a new program, and the result is *Claymation*. This has been out on the PC and Mac for months, but now he's moved on to producing a proper version for a machine that's really designed for 3D work (ie – the Amiga).

Most programs deal with objects as a series of points and edges, with the faces inbetween. However, *Claymation* takes a completely different approach, in that the surface of an object is defined by a series of quadratic equations. Producing the image is then a question of running these equations through the rendering program, which calculates the surfaces from them. This means that it's very easy to produce organic looking objects, which has always been a problem with programs that use point and edge modelling.

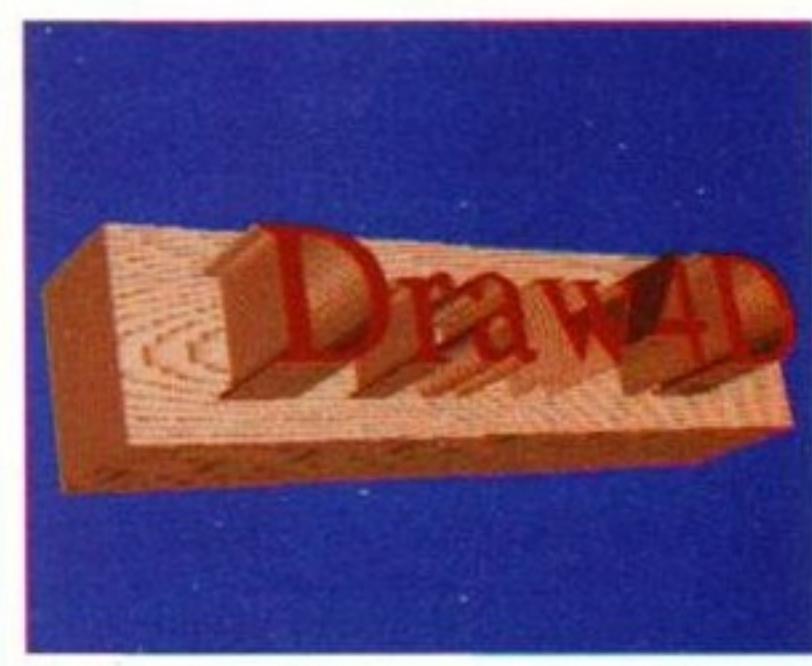
This also means that manipulating objects is easy, because you don't have to drag individual points. If, for instance, you wanted to increase the size of the nose of a 3D model of a face, you would only need to grab the nose and pull it out. Unfortunately, the program arrived too late to be reviewed, but expect a full review sometime over the next few months.

Draw 4D Pro

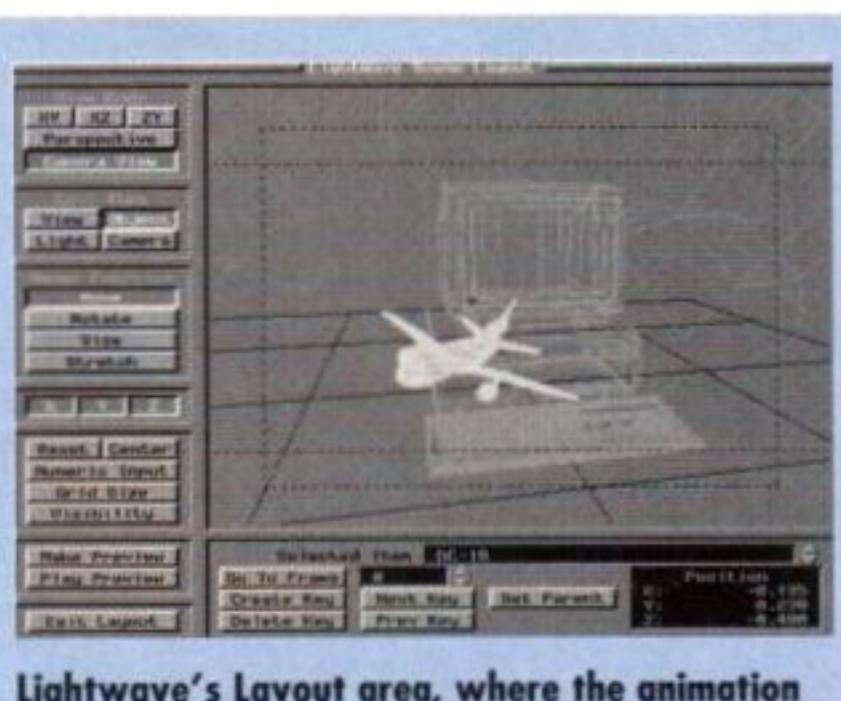
AVAILABLE FROM: VARIOUS SOURCES £170 (APPROX)



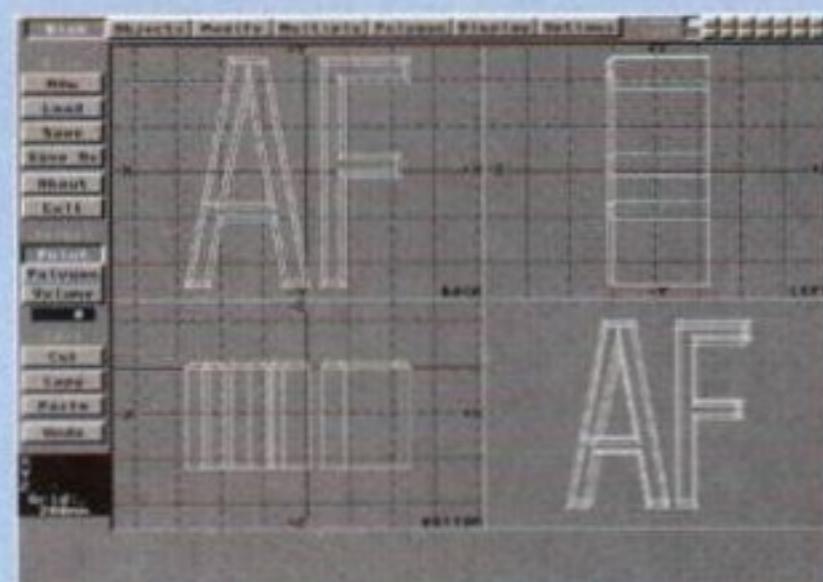
Draw 4D has a very easy-to-use interface, and as you can see, it's easily capable of producing complex models.



Draw 4D is excellent for producing 3D images which involve extruding text in a 3D fashion.



Lightwave's Layout area, where the animation is choreographed.



The Modeller section of Lightwave. Not my favourite but very capable in the right hands.

limb on this one. But there's no doubt about it - *Lightwave* and *Modeller* (and of course the *Video Toaster*) make a very powerful combination. Perhaps the rest of the Amiga world will be able to use it one day.

Gary Whiteley

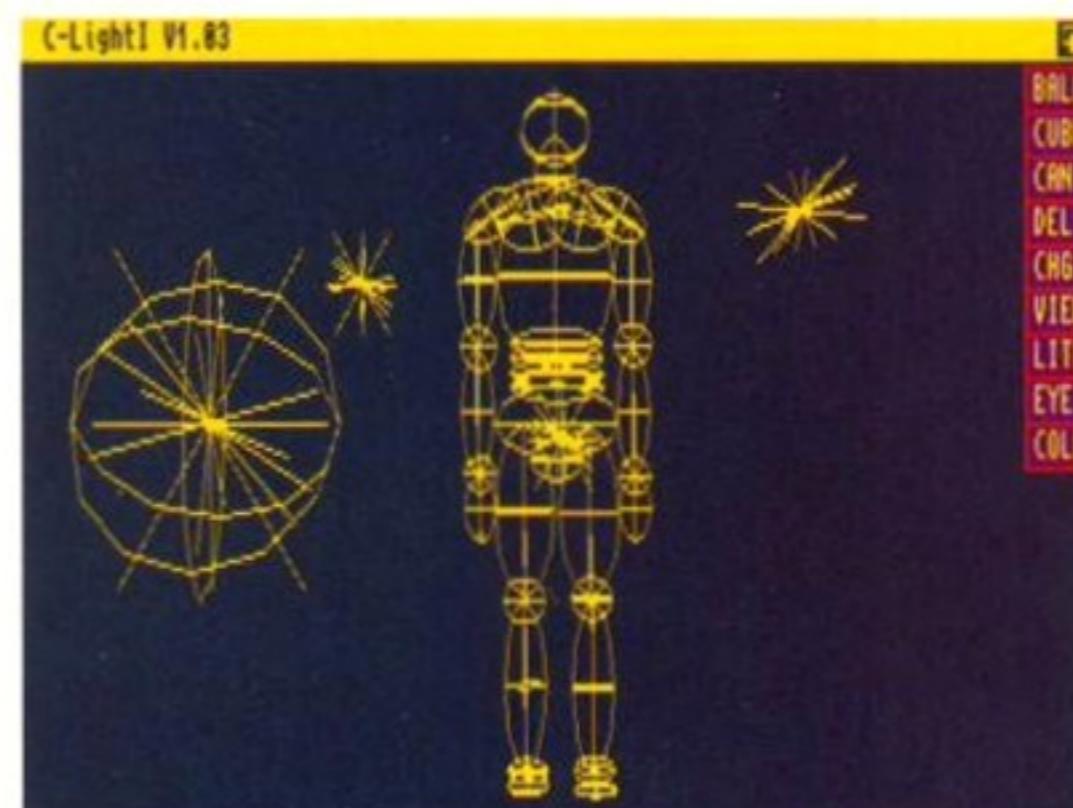
Sometimes, you don't need all of the power of a ray tracing program such as *Imagine*. All you need is to be able to create a bit of 3D text, or a simple object with some 3D extrusion for use in a DTP document, or as part of another image. This is what *Draw 4D* was designed to do.

Much like *Caligari*, the designers avoided the more common tri view of the object, and went for a perspective view. This means that it's easier to see the overall shape of the object, and how it will appear when finally rendered. There's a wide range of tools for building the objects with the usual spin and extrude facilities. It's heavily biased towards working with text, and includes the rather weird ability to extrude from an object in the shape of any letter of the alphabet. It sounds rather strange, but it is extremely useful in the right circumstances. Once you've produced your object and rendered your image, you can save it as either an IFF image or in *Professional Page* clip art format.

Draw 4D is a very capable program, but it's only really useful in a very specific set of circumstances. If you're wanting to create 3D text for use in DTP or video, it's quick and easy. Unfortunately, it's not much good for other purposes, because the output options are limited, to say the least. However, if this is what you want, it's a very powerful program, and it's much faster than using a ray tracing program.

C-Light

AVAILABLE FROM: ANY GOOD PUBLIC DOMAIN SUPPLIER



C-Light doesn't have all of the bells and whistles, but it's a great way of exploring the intricacies of 3D without the cost.

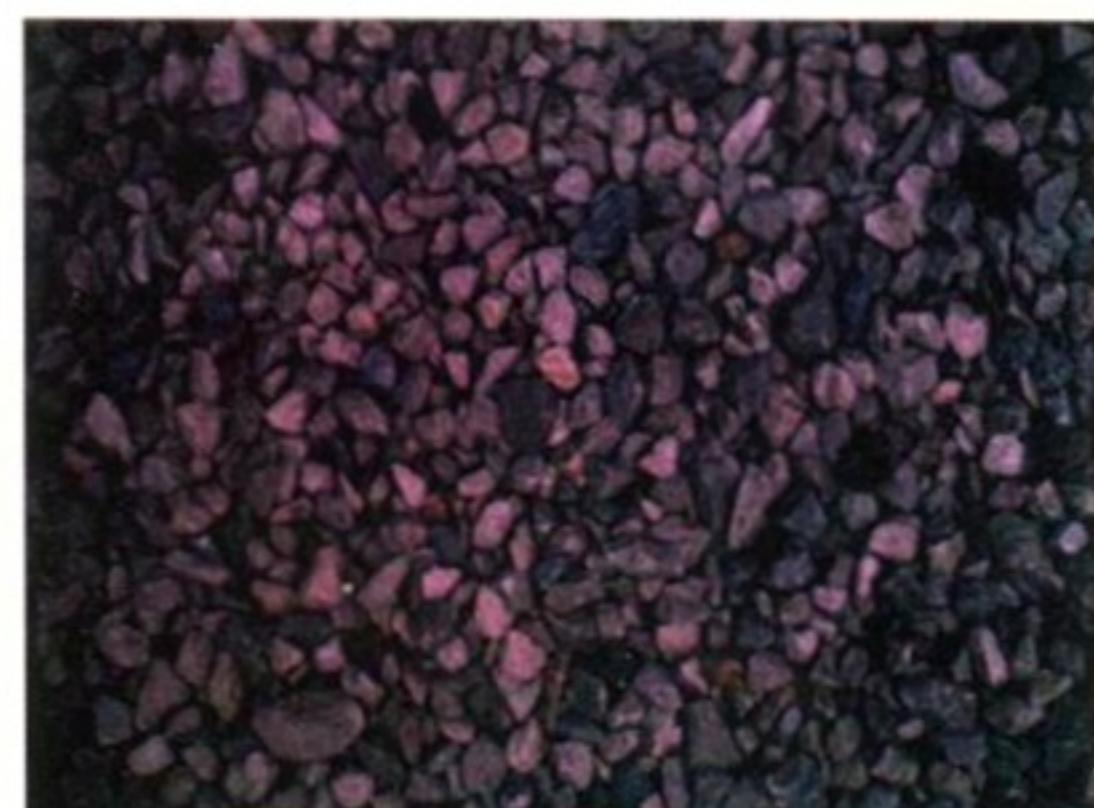
This is definitely the cheap alternative, because it's in the Public Domain, which means you can get a copy from a friend for nothing, or for a couple of quid from any good PD library. The author (Ronald A Peterson) originally wrote it with the intention of producing a commercial product, but after several bad experiences with publishers he decided to make it available as PD.

It's divided into two parts, with one for creating the models and building the scene, and the other for carrying out the processing and creating the image. All of the basic tools that you would expect (such as creating primitives like balls and cubes and adding multicoloured light sources) are present, but there are none of the more complex point or surface manipulation tools found on other programs. You can scale the objects in all three dimensions, but you can't alter them beyond this. However, it is possible with a little patience, to create some good objects using only these shapes.

Once you've created the scene, you save it as a file and run the second program (*CLight II*) which renders the image and saves it out as an IFF file. It's by no means the quickest or most powerful 3D program (the demo image shown here took over an hour to render on an A3000), but if you're interested in 3D modelling and ray tracing, it's a great introduction at little or no expense.

3D Textures

AVAILABLE FROM: ALTERNATIVE IMAGE (0533 440041) £40



Stones may not seem particularly exciting, but they could be useful if you're a serious raytracer...

Creating beautiful objects is all very well, but how do you make them look realistic? Many programs in this feature include textures that can be applied to objects to simulate various materials, but you can't beat the real world can you?

The best thing to do is take some of the real world, in the form of a digitised 24-bit image. Unfortunately, producing images suitable for this requires an expensive digitiser and a lot of time. Fortunately, Alternative Image have already done this, and have produced two volumes of textures suitable for use with any of the programs in this review. Apparently, when Henri Bujiko goes on holiday he doesn't bother with the usual snaps, but instead photographs any objects with interesting colours or textures. When he gets back to the office, he digitises them in 16 million colours, and the result is these two volumes of textures.

Each set contains 12 disks, and each disk has a specific texture or image. Subjects range from marble to sand to underwater rocks. They are all in four formats: a standard HAM image, a 256 colour version, a monochrome version suitable for use with bump mapping and a full 24-bit version.

These disks are only of use to someone who's seriously into ray tracing. They are quite expensive, but if you need to do an animation quickly, this could be an extremely useful resource to have handy. Now all we need is for Alternative Image to bring out both volumes on CD...

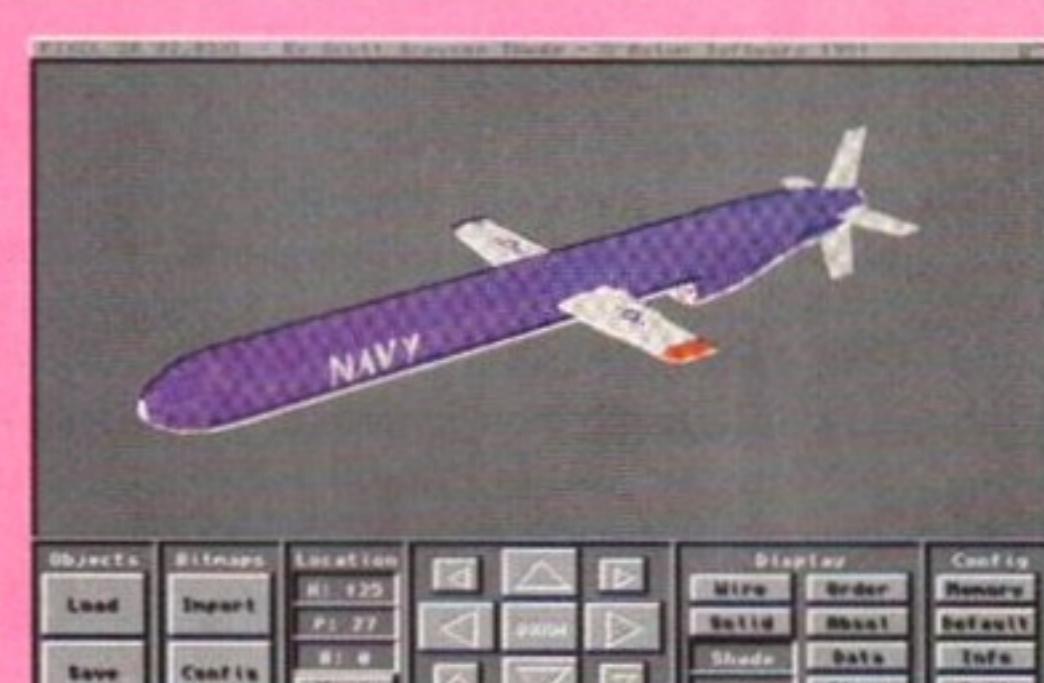
Pixel 3D Professional

BITMAP TO VECTOR CONVERTER
ALTERNATIVE IMAGE (0533 440041)
£160

There are a wide variety of ready made 3D models available for the programs reviewed here, but none of the programs can read those produced in other programs, unless you've a copy of *Pixel 3D* that is...

Pixel 3D is a program which can load in an object created in *Lightwave 3D*, *3D Pro*, *Turbo Silver*, *Autocad*, *Imagine*, *Sculpt 3D* or *Videoscape 3D* and save it out to any other of these formats. It will load any IFF and convert it into a 3D object and while converting it can also spin the object (giving you a spiral object), add beveling on the edge and smooth the object to a varying degree. Although this will have most relevance for high resolution, two colour images (for creating logos), it makes a good job of images with more colours, if you fancy adding a stained glass window to your scene.

It's currently in its second incarnation, with several improvements over the version that was reviewed way back in issue 25. The speed of processing has been improved, and includes a version specially



Converting objects from one 3D format to another is easy with *Pixel 3D*.

designed for use on accelerated Amigas. Unfortunately, there are still a few bugs and it's not the friendliest program I've ever used.

If you're regularly wanting to use objects in several different programs, or wanting to have more of a degree of control over converting IFF images than programs such as *Imagine* offer, *Pixel 3D 2* is well worth checking out. However, it is extremely expensive for such a utility.

If (as we all suspect) God plays Populous on His Day of Rest, REAL 3D is what He must have been using for the rest of the week.

On the other hand, as a mere mortal, Brian Larkman just gets creative with...

Animating with Real 3D 2

IF YOU WANT to model the world, God jokes aside, there are a few features that you must have. Every decent 3D system since *Sculpt 3D* has given you reasonable modelling tools, surface textures, adjustable light sources, realistic ray-traced rendering and animation, and much more. These features are now the norm. Using such tools, a flood of fantastic images and animations has poured from our Amigas over the last nine years.

Brilliant as these images are, for an artist the lack of subtlety in many of them, is quite troubling. Often the best art comes from manipulating the soft edges of any medium, the smears and smudges, the overlays and washes, the after-images, the soft focus.

In animation also, apart from the work of a few gifted professional animators who instinctively know about manually blurring the edges of animation, subtly 'easing' movements in and out, the motion paths used can be quite robotic and mechanical looking. Although expensive high-end 3D systems can produce these effects, few affordable desktop machines could cope – soft edges and realistic motion need lots of power.

The arrival of *Real 3D 2*, reviewed in *Amiga Format 46*, has changed all of this because, as well as blended textures, soft shadows, depth of field, and atmospheric effects, it offers realistic animation control. Most of the new modelling and rendering tools were discussed in the review, so for this feature it's time for an animated discussion.

Although this all refers to *Real 3D*, the principles were developed over the past 10

This image illustrates the powerful new features of *Real 3D 2*. It took over 24 hours to render on a 33MHz Amiga 030. Overall, there is a depth of field effect. The light source is a rectangle and light samples are set to one, so the shadows have soft edges.

All of the objects except the blue pyramid are B-Spline mesh objects that render with no sign of faceting at the edges (see especially the red bangle) and superior mapping, but they are cause the slow render. The pyramid is spinning just off its main axis and it has a motion blur Attribute.



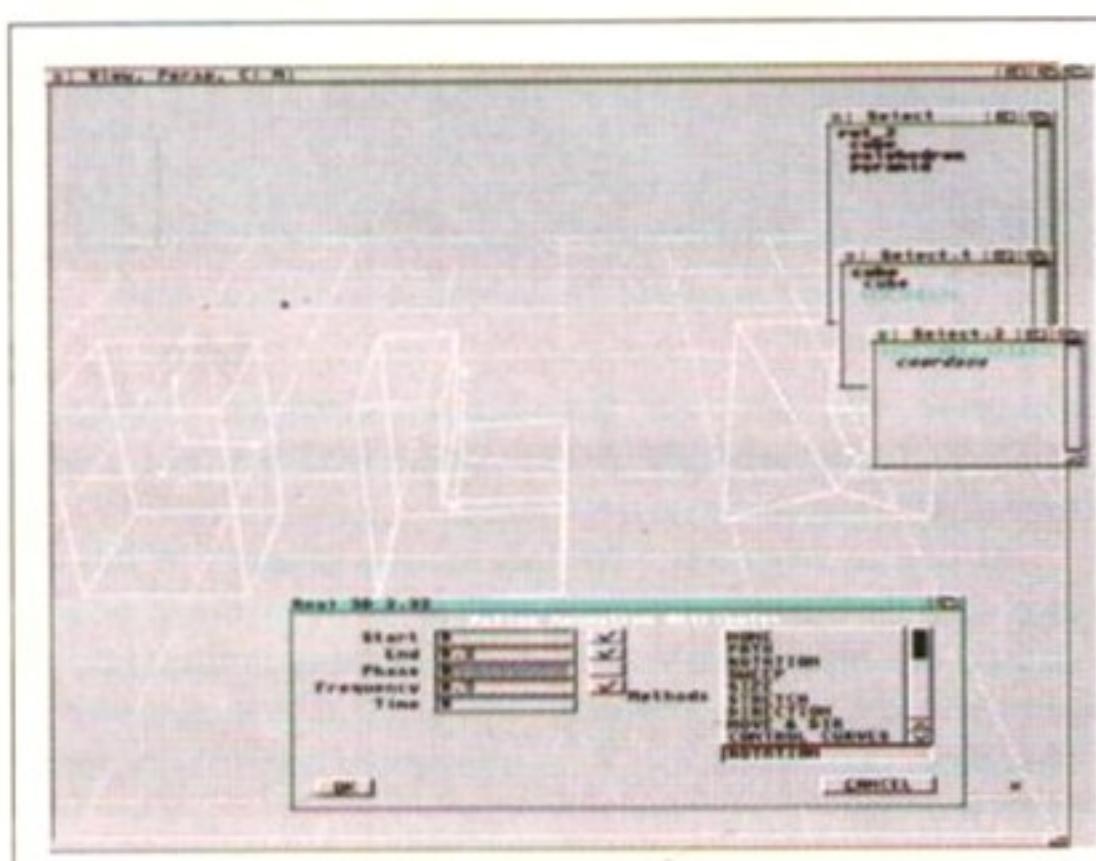
years for high-end animation systems and used for computer graphic effects in Hollywood films and TV adverts. As computer power improves, these techniques will become commonplace on home computers – *Real 3D* is just the beginning!

REAL 3D VERSION 2
was reviewed in *AF46* and is available from Alternative Image on 0533 440041

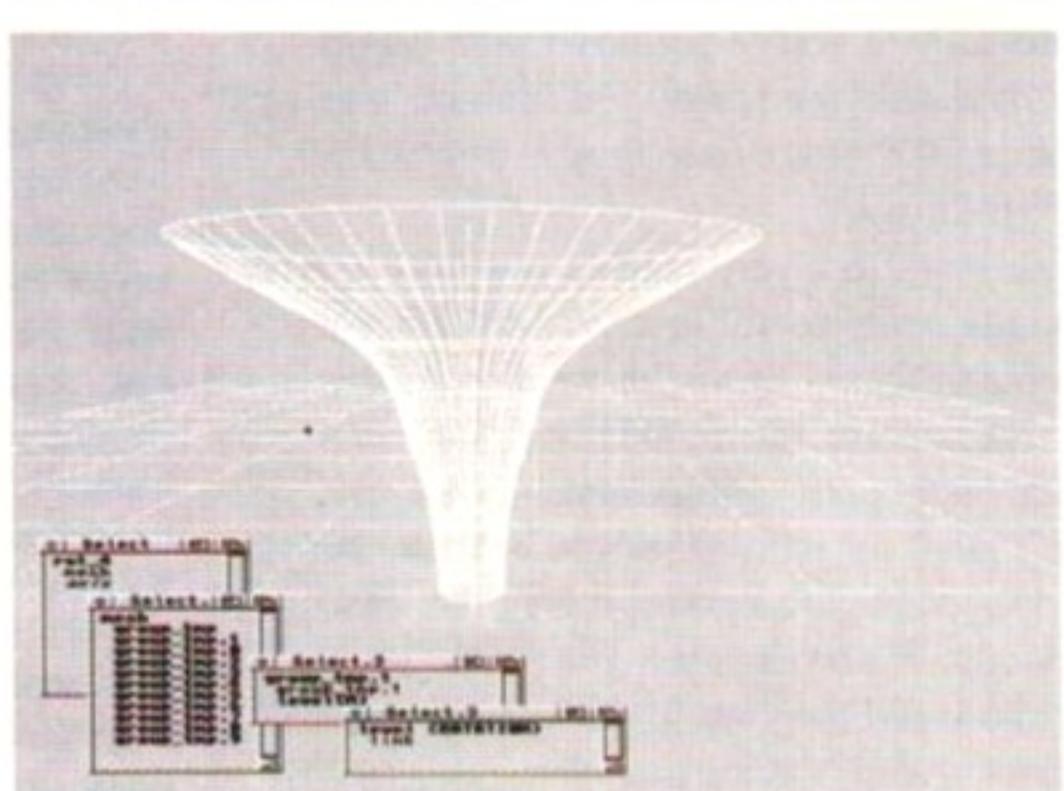
The best animators learn their craft by watching the real world, observing the minute changes of speed and direction that distinguish realistic motion from mechanical movement. Without spending a lifetime learning this art, the only way to make animation look real is to

give the objects real properties – mass, shape, friction, gravity, wind speed, collisions, applied forces. All of these and more can be programmed into *Real 3D* objects. Once a force is applied, your animation will roll, slide or collide, just like objects do when they're in the real world.

Real 3D 2 applies its properties and animation effects in the same way it produces materials and textures, by including them in the object's hierarchy – one of those classically simple ideas. All of the animation types are provided as pseudo objects called



Placing a Rotation Method with an object, and an axis beneath it will rotate the object around the axis. The degree of rotation is controlled via the Animation Method Properties Requestor. This allows the parameters for any Method to be defined, including start and stop times, phase and frequency. The Tornado is twisted by selecting each horizontal band of points as a group and giving them different frequencies of rotation.



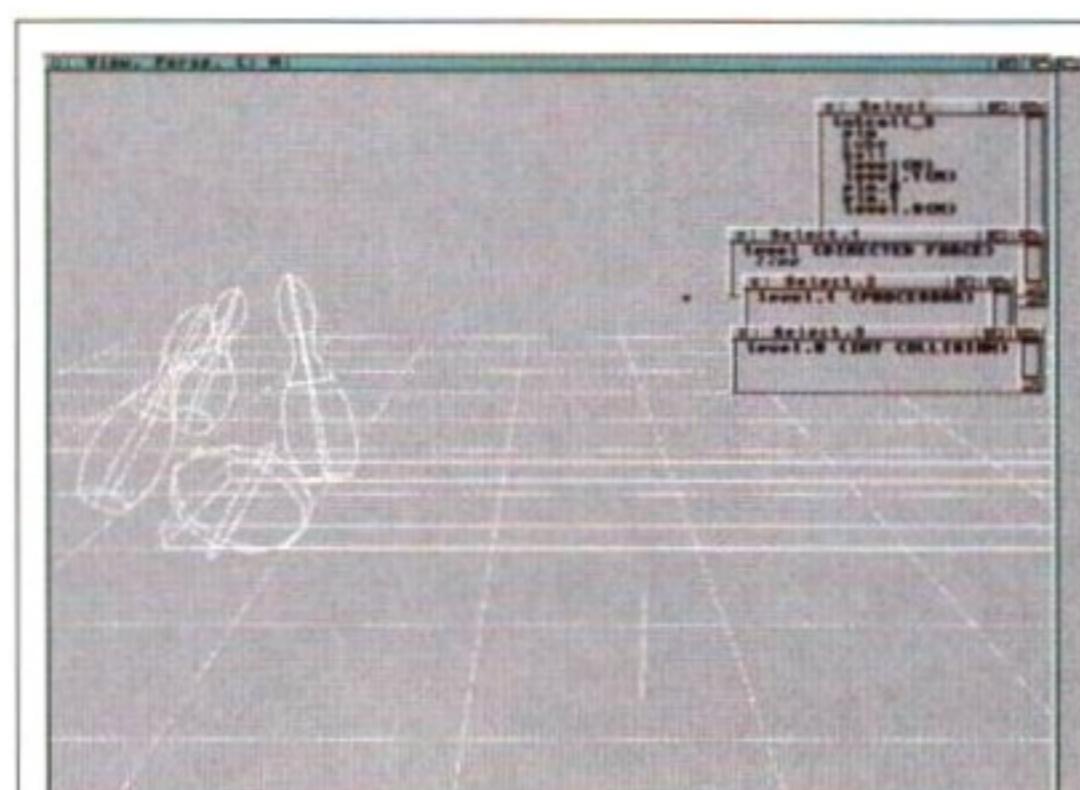


Methods. These will affect any real modelled objects placed at the same level in the hierarchy with them.

A Real object can therefore be modelled, its material qualities added – surface texture, transparency, and so on, and then even its type of motion – walking, rolling, pulsing – tacked into the hierarchy. This produces a complete entity that can be saved, duplicated, and used repeatedly, acted upon by other forces just like a real creature, plant or machine. This way *Real 3D 2* gives you true object oriented programming at work!

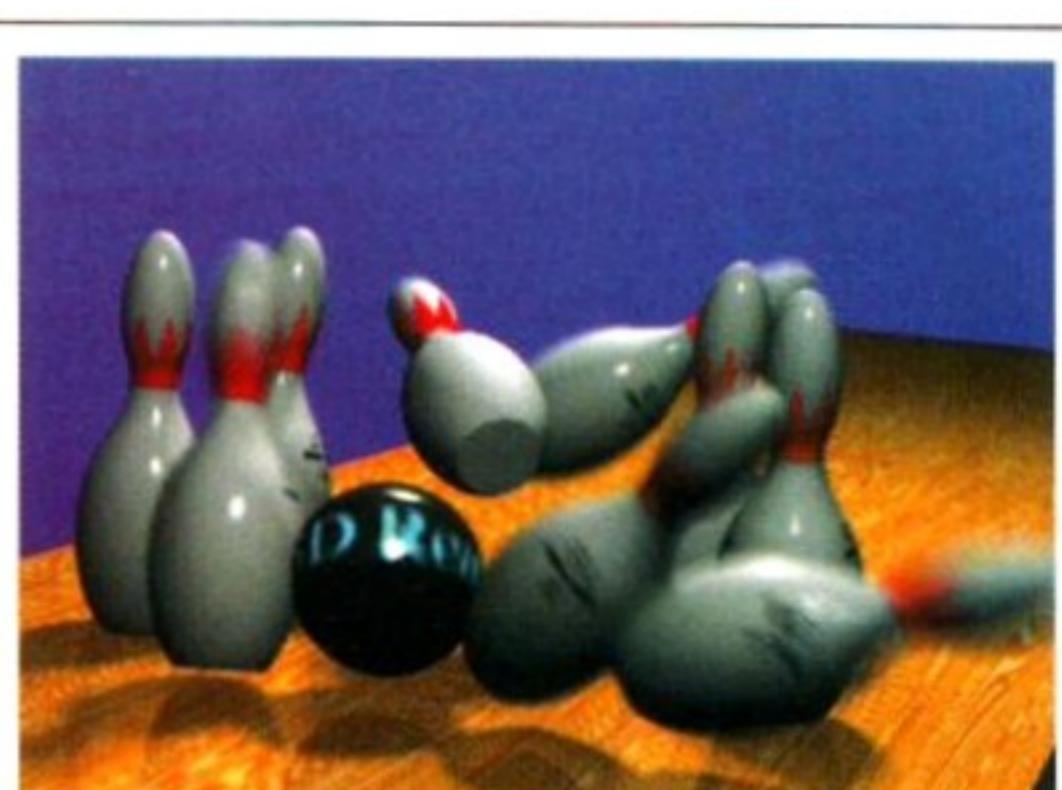


Objects, like cars and planes, following a path often need to point along it. The Direction Method takes care of this. This Fish/Slug not only points along the path, it deforms to follow it. Variations include Move&Dir Method which allows separate Move and direct paths, and Control Curve Method with 2 control curves.



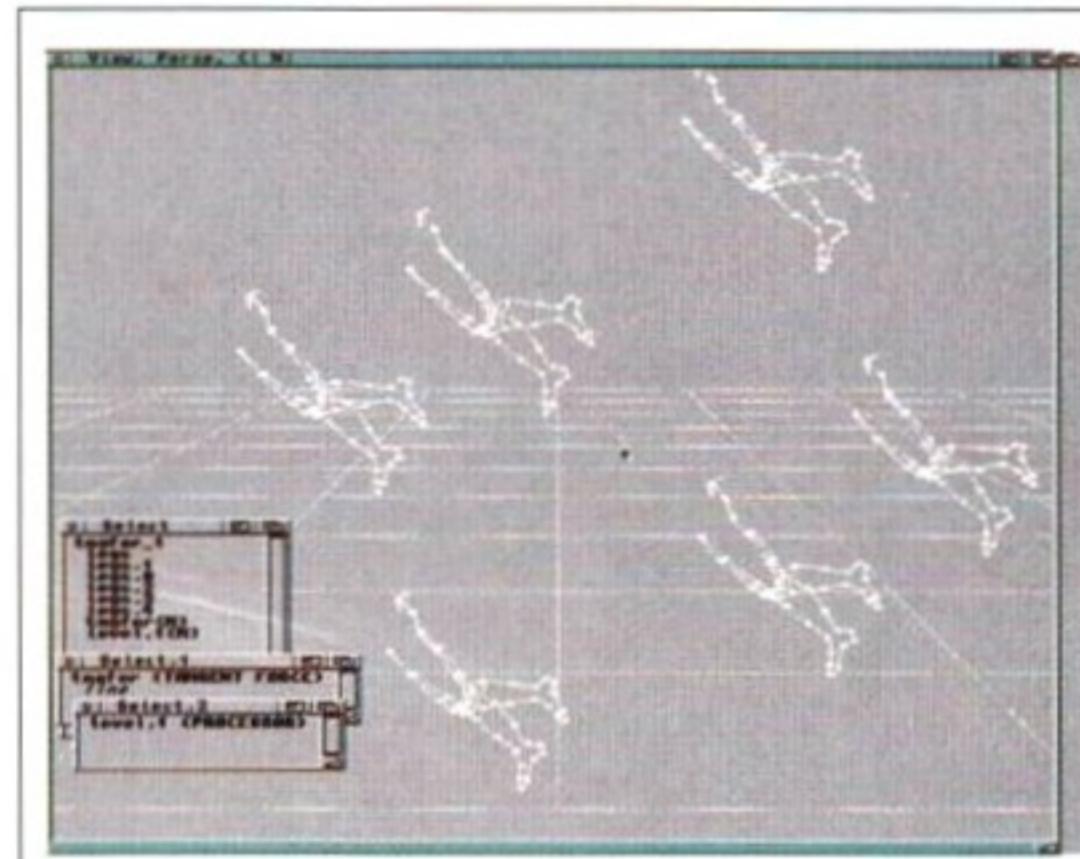
If our object comes in contact with other objects there should be a reaction. This comes under the Interactive Collision Method. The classic example of this is a bowling alley – the alley floor has a mass to prevent it from being moved by the ball or pins. Gravity is set to a standard amount for the scene using a Directed Force Method, and an Int Collision Method will control all of the collisions and ensure that the ball and pins will react correctly.

Next a value for friction is added to both the alley floor



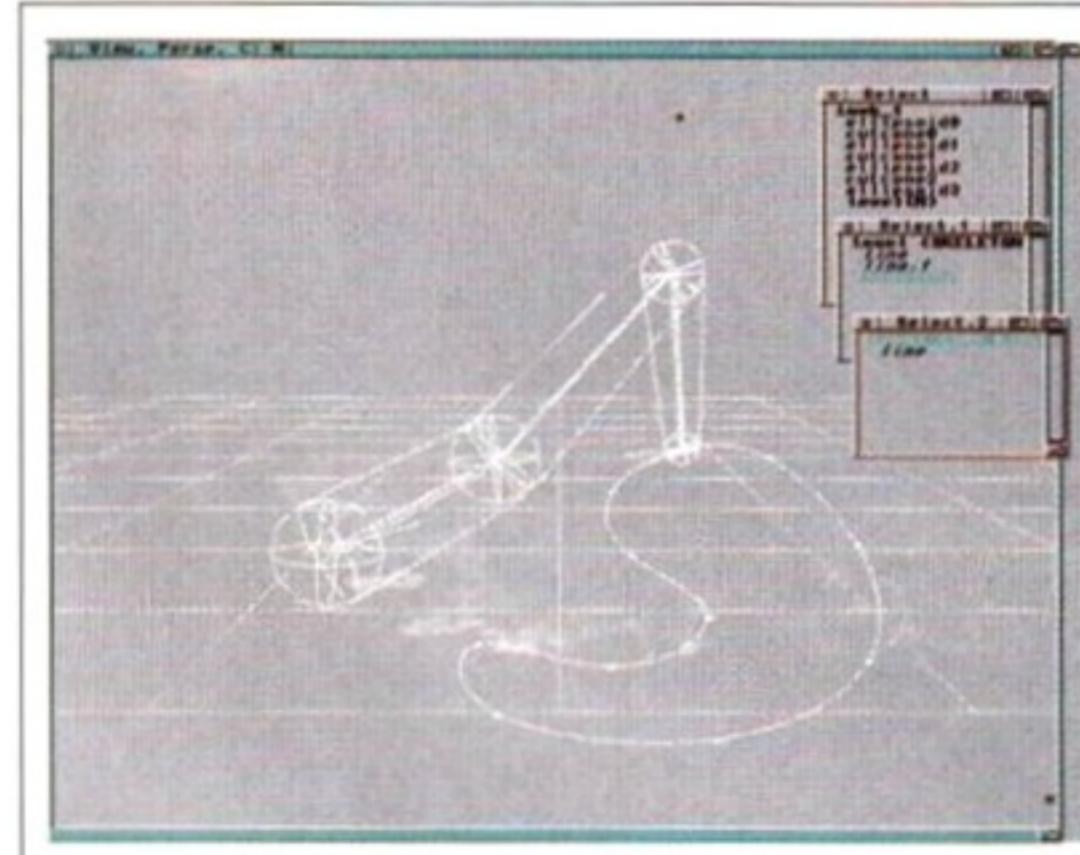
and the ball to make the ball rotate rather than skid down towards the pins. Finally, the ball is given a velocity vector to propel it along the alley. If you start it off about half a metre above the alley so that it crashes down and bounces the simulation of the average player will be complete.

For the final render, if you do one, the pins and ball can be given motion blur using the Attributes Requester. The final effect is amazing from such a simple animation, and shows the immense power of this system.



Real 3D's ability to give objects real properties acted upon by applied forces such as gravity or wind speed can only work because each object has a 'life' of its own. If you duplicate an object, each copy can be set off on its own journey, interacting with the other 'clones' and with the world around it. This technique is called 'particle' animation or 'flocking'. In *Real 3D 2* it is developed beyond this to animate full objects with their own built-in 'character'.

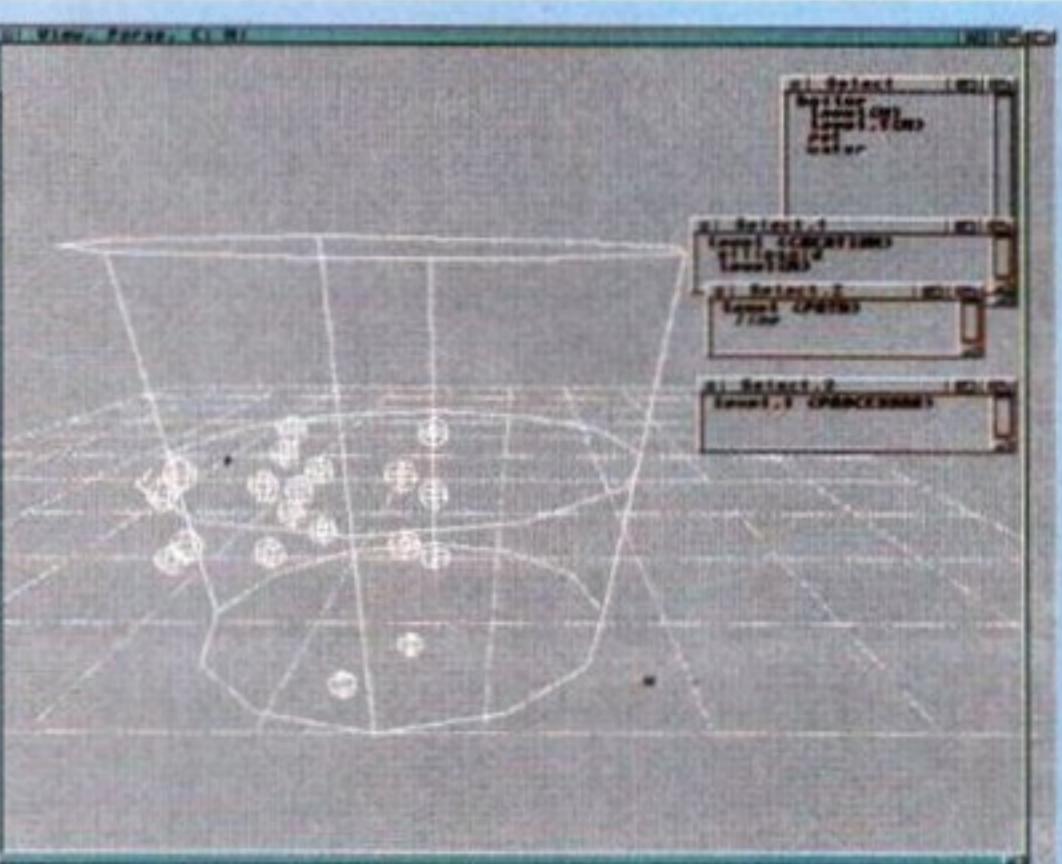
A range of forces can act on these objects. The simplest is a Radial Force of attraction or repulsion. Given a value, this can be the basis for a simulation of gravity, with all objects affected equally. Using the Directed Force Method, a line can be added beneath the method in the hierarchy that represents the direction of the force. If the line is curved, the force varies over time, simulating turbulence. Adding a Tangential Force Method will make a 'flock' of objects break away from each other as they rotate. Here a 'flock' of legs are spun away from their circular dance by this tangential force.



A complex problem of any animation is making characters move convincingly. *Real 3D 2* uses several methods to control this including Sweep, Skeleton, and Inverse Kinematics. Sweep usually controls a limb swinging around a pivot point.

A Skeleton is a simple object that can be manipulated easily, but which controls the movement of a more complex object. On other 3D systems this takes the form of simple straight lines that act as stick figures controlling the full anatomy of a body for example. *Real 3D* Skeletons can be B-Spline lines that will bend allowing beautifully articulated limbs. Imagine animating an Octopus for example!

Even worse, imagine one tentacle pressing a button. The Inverse Kinematics Method allows the tip of a finger or limb to be positioned independently, dragging the rest of its limb with it. This technique is powerful, especially with the Skeleton Method. The only thing it needs is a way to limit movement so that arms cannot be bent back unconvincingly.



As usual there is not enough space to describe everything – we have only scratched the surface of the tutorials, let alone started with real experiments. Nevertheless, the final example puts together several Methods in one.

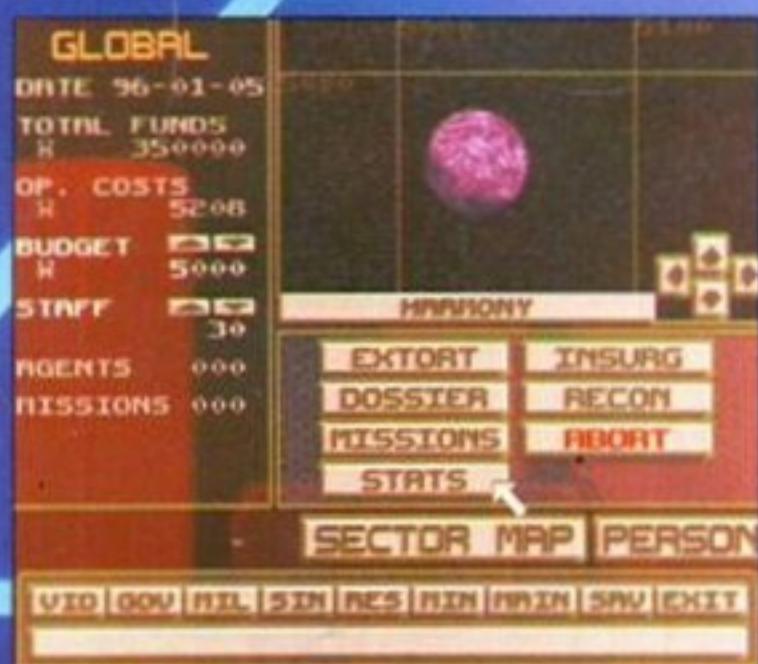
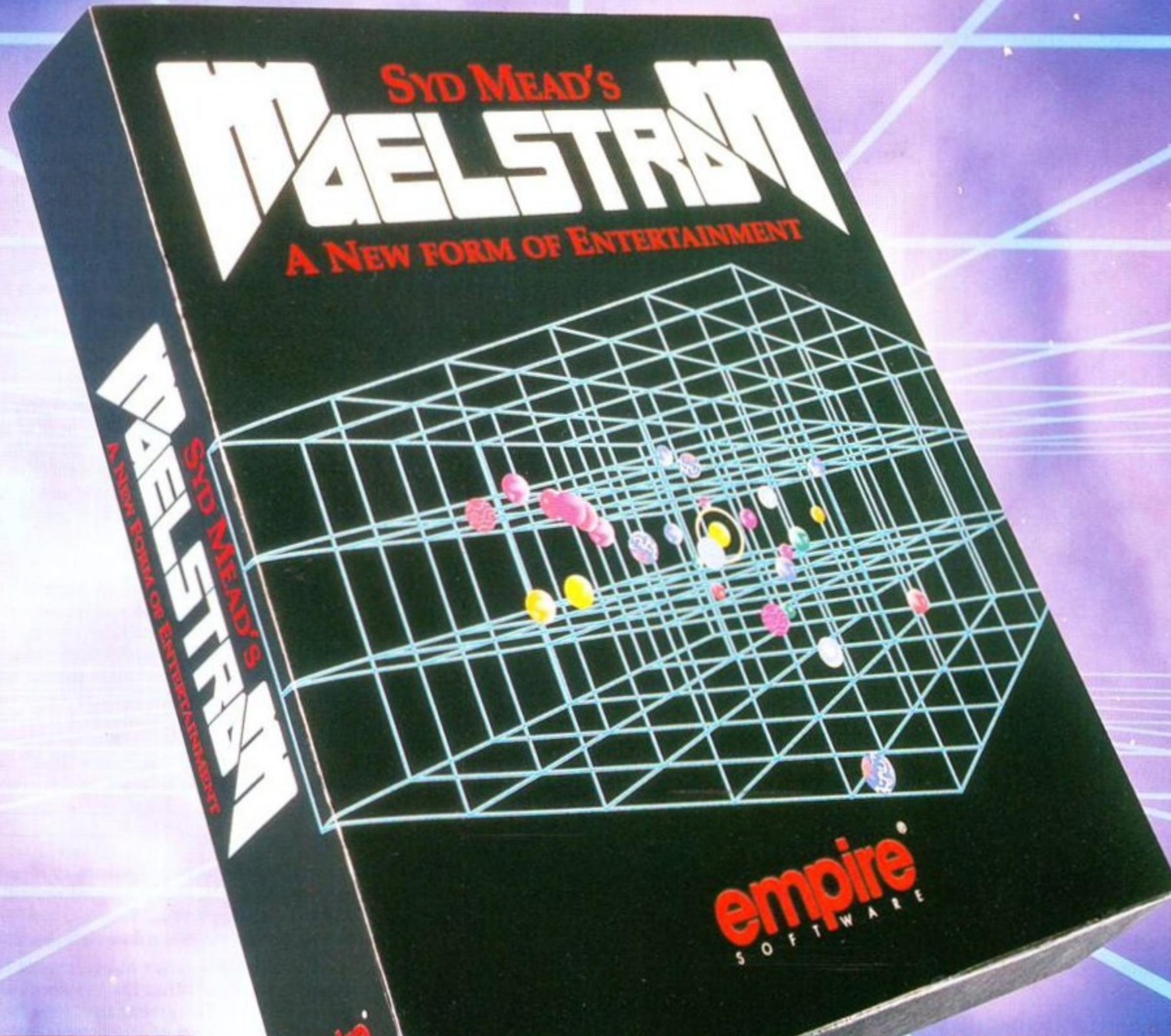
Imagine dropping an effervescent tablet into a glass of water. Theoretically the tablet hitting the water should create a circular wave, and a splash, sink to the bottom, start to fizz sending bubbles to the surface, rock-and-roll a bit then rise to the surface to dissolve away.

All of this is probably possible with *Real 3D*, though making the water react to the tablet may be difficult. There is a Wave Method that could be timed to produce suitable radial waves. A Directed Force Method, (or maybe a Friction TAG) could be used to slow the tablet's fall in the water and its wobble as it sinks. At the bottom, a Creation Method could create bubbles that grow and rise, similar to the ones illustrated here for boiling water. Finally the tablet could pop to the surface along a Path and dissolve with a Size Method.

BORN IN THE MIND OF SYD MEAD

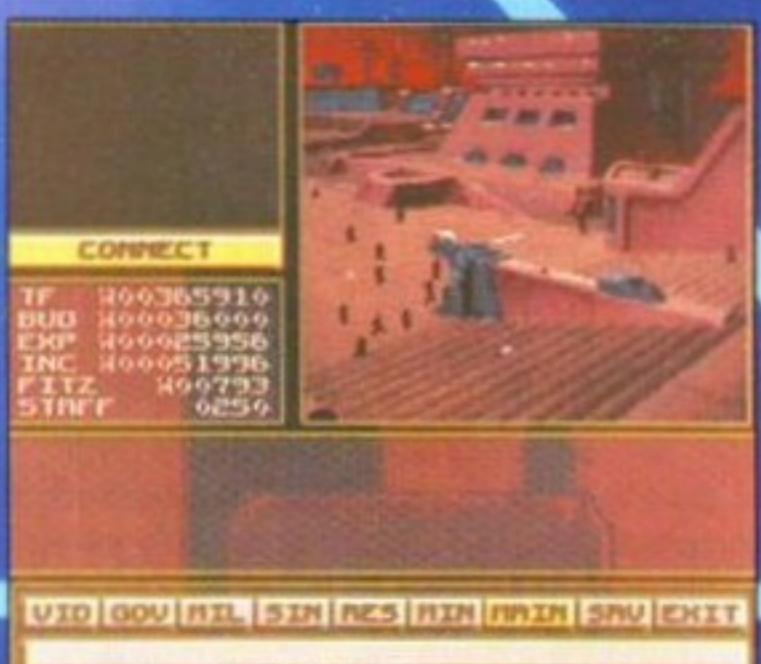
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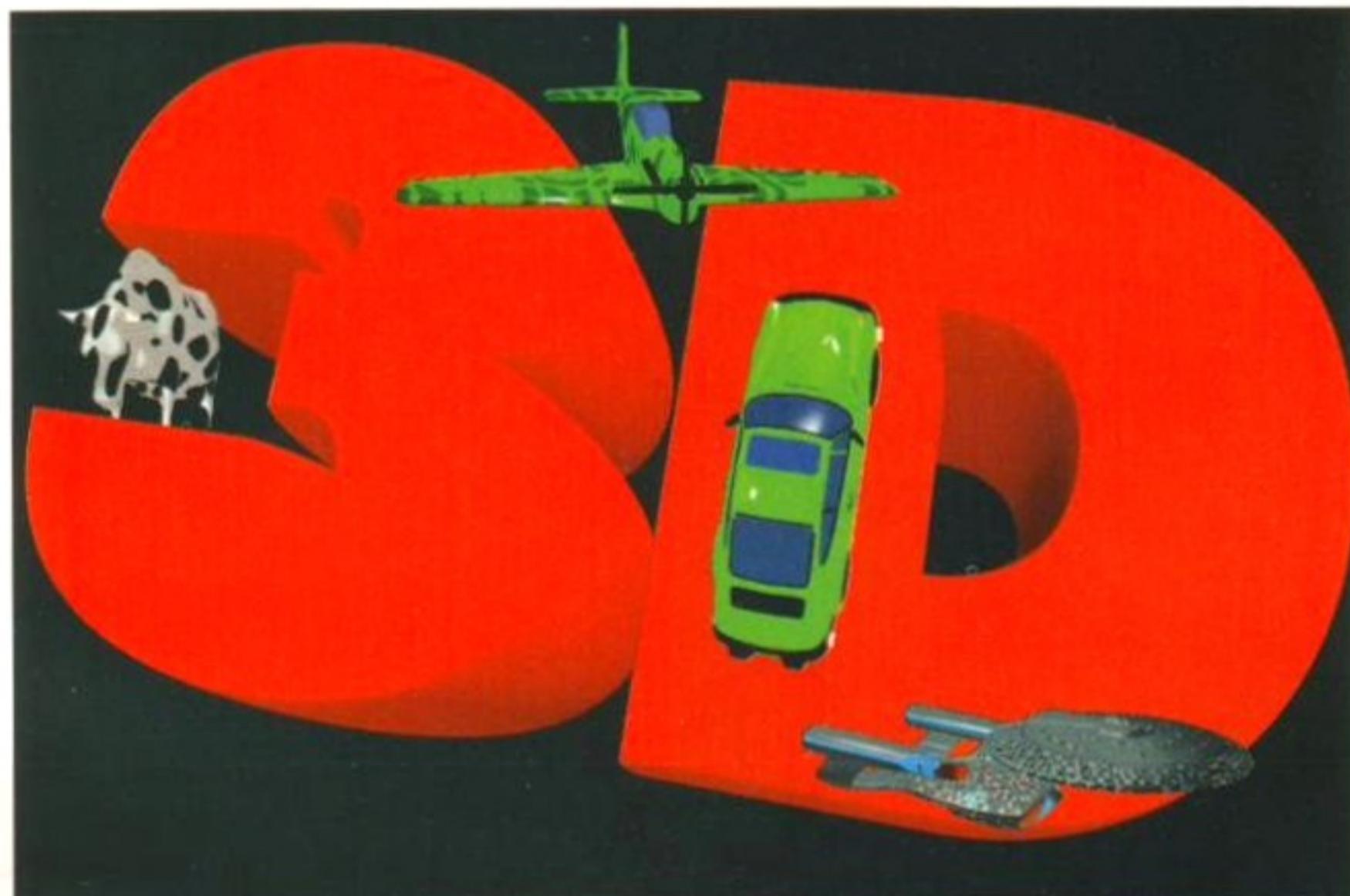
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This month's stunning 3D cover illustration was produced using Amigas.

Richard Baguley takes you through the process of creating the final image.

Covering the magazine



THE FIRST STEP in producing this cover was to produce a design, showing what sort of images would be used, and how they would fit together. This was done by Marcus Dyson (editor) and Sue White (art editor). This design called for a variety of objects to be flying around the central theme of the cover, the letters 3D, which were to be ray traced.

The first thing we did was to create the two letters as objects, and ray traced them. A two colour high resolution IFF image of these was produced using the appropriate text font, and this was converted into an *Imagine* object by using the program *Pixel 3D*. This scans the IFF image and creates a flat object from it. This was then extruded to create a complete 3D object, which was loaded into *Imagine* and rendered in 24-bit colour at a resolution of 1,832 x 1,125.

A quick check through the Public Domain models available on the CIX Bulletin Board for the ray tracing program *Imagine*, and the

objects supplied with the program gave four suitable models: a cow, a P51 mustang plane, a Porsche car, and the Starship Enterprise.

The Starship Enterprise was particularly interesting in that it alone took 1.6Mb of disk space. Produced by an American called Carmen Rizzolo, it is composed of 146 different parts and many thousands of points. There is an incredible amount of detail in this model, and it produces truly stunning images. However, it requires vast amounts of memory to render, and needed the virtual memory program *Gigamem* to give more memory to the accelerated A3000 used to produce the images. In the end, rendering this model needed around 12 megabytes of memory.

Although the cover required these images to be flying around the 3D text, it would have been impractical to render all of the images in one scene, since this would have taken an incredible amount of time and memory.

ASDG's excellent program *Art Department Professional* is excellent at combining 24-bit images together, although GVP's new program *ImageFX* can also combine images in 16 million colours.



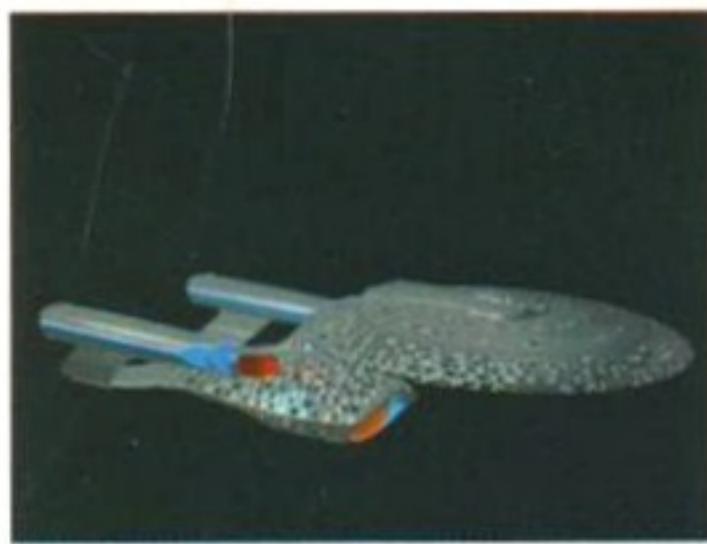
Instead, each of the objects were rendered separately, and the 24-bit images produced were combined together to give the final version of the cover. Each of the separate illustrations is shown on this page.

Unfortunately, time constraints meant that the process of combining the images together was done on Marcus's Apple Mac, which is based around a 68040 and has over 16Mb of memory on board. This machine was capable of carrying out the image compositing much quicker than the Amigas we use in the office.

However, there is absolutely no reason why an Amiga couldn't be used for this, since either ASDG's program *Art Department Professional* or GVP's *ImageFX* would have been capable of producing the final image. All of the images had been produced with backgrounds of one solid colour, which could be used as a transparency mask when compositing the images.

Just to prove that it can be done, the illustration of the cover (pictured above left) was produced completely on a 6Mb A3000 running *Imagine*, *AdPro* and *Gigamem* with a Retina graphics card used for viewing the 24-bit images. No other computers were used at all during this process. Now, who says that Amigas aren't capable of producing professional quality images?

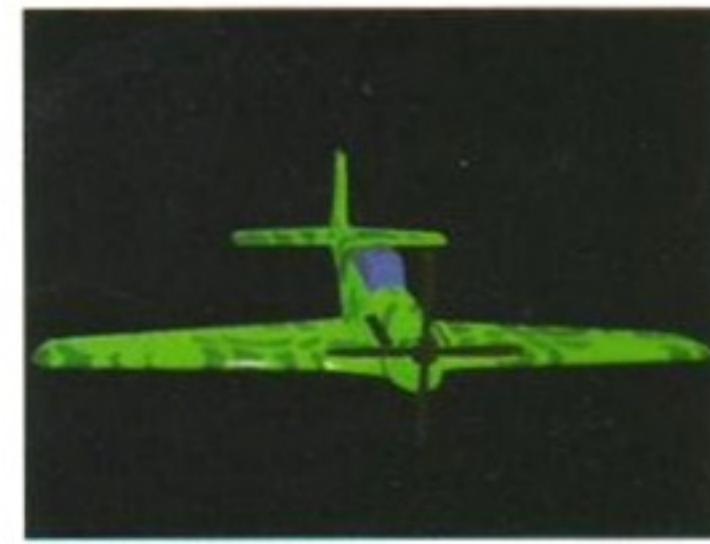
INDIVIDUAL IMAGES THAT MADE UP THE COVER ILLUSTRATION



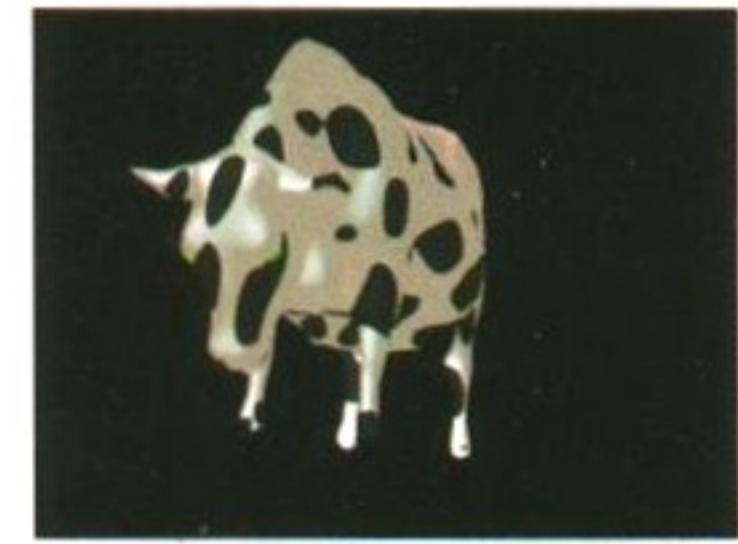
This image of the Starship Enterprise was rendered from a PD *Imagine* model.



The render of a Porsche was created at this angle to fit in with the character D.



A green camouflaged P51 was rotated through 90 degrees for the actual cover.



And finally, a hovering Bovine, set to graze on the number 3 of the main image.



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M1230 XA 50Mhz, 2Mb.....£419.99

M1230 XA 50Mhz, 4Mb.....£489.99

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GVP

A1230/0Mb RAM for A1200 only £284.99

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Branded disks come complete with labels



These are the nine beauties on review, and over the next few pages we'll tell you which speed machine is best for you, depending on what machine you have, how much you want to spend and any extras you may need.

What have Paul Newman, James Dean and **Richard Baguley** got in common – a need for speed that's what. OK, Rich doesn't want to hurl round Daytona at 200mph, instead he's taking nine Amiga accelerators for a group test over the next four pages...

Go faster stripes

ALTHOUGH YOU MAY think that your trusty Amiga is fast, the truth is that it could get faster. If you're involved in processor-intensive tasks like ray tracing or desktop publishing, anything that cuts down on the several hours that images can take to render, or the long time spent waiting for the screen to redraw your latest DTP document are welcome.

Accelerators work by replacing the CPU (Central Processor Unit) with a faster or newer model, which can carry out the same operations faster and more efficiently. Many also come with a FPU (Floating Point Unit), which is a chip specially designed to do floating point maths extremely quickly.

We have set up a variety of tests to see what sort of speed increase you can expect from these cards. These include rendering an image in *Imagine*, drawing a *Vista Pro 3* scene, and redrawing a page in *ProPage 4* which included Compugraphic fonts and a piece of *ProPage* clip art. The *AIBB* program is then run to measure the speed increase of the cards, which gives three figures showing the performance increase with integer mathematics, graphics handling and floating point maths.

To determine each card's value for money, we add

the three *AIBB* performance figures and divide the total by the cost of the card, giving you an idea of what sort of performance increase per pound you get. This gives some interesting results, but bear in mind the price of a card when using this figure, because it's foolish to expect a faster 68000 to out perform a 68040-based model.

So, as you'd expect, the main consideration when you're looking for an accelerator is speed and how many times faster your machine is going to be after spending all that money and fitting the accelerator.

Unfortunately, it's not that simple. Many cards also come with other extras, such as SCSI (Small Computer Systems Interface) for attaching hard disks, tape streamers and flatbed scanners or custom slots for adding other peripherals such as graphics cards. This will obviously affect the price of the card, so these accelerators are indicated with an asterisk (*) after the price performance ratio.

When you're looking for an accelerator to buy, don't forget that you'll need some extra memory to make the most of its extra power, since most accelerators have to slow down to talk to the memory already fitted inside your Amiga. How much memory should you buy? As much as possible...

Acceler

ALTHOUGH THE A500 has been overshadowed by the newer Amigas, there are still several million in use around the world, and accelerating them to catch up with the newer models is still a realistic option. Plus, the prices of accelerators have been falling over the past few months as more people move on to the A1200 and A4000. So, which accelerator is the best?

CSA DERRINGER

AVAILABLE FROM: OMEGA
PROJECTS 0942 682203

£349.99 (25Mhz CPU and Co-Pro, 1Mb memory)
£599.99 (50Mhz CPU and 25Mhz Co-Pro, 1Mb Memory)
£799.99 (25Mhz CPU and 50Mhz Co-Pro, 4Mb memory) – model reviewed
Price/Performance ratio: 41



The Derringer fits into the 68000 socket inside the A500, and doesn't take up any of the expansion slots.

This accelerator is basically an updated version of the Mega Midget Racer, which was favourably reviewed way back in AF18. It's based around a full 68030, running at either 25 or 50Mhz. A co-processor can also be fitted, running at a different speed.

The board fits inside the A500 case, sitting in the 68000 socket. This chip is then reseated on the board, and you can reboot with the 68000 in control by running a program that's provided with the board. Also included are a couple of utilities, and a small patch program which must be put into the start-up sequence to add the 32-bit memory to the system. This is in the form of a single SIMM (single In-line Memory Module), fitted in a single slot on the edge of the board, so you can add a maximum of 8Mb of 32-bit fast memory to the system.

As with most of the other cards, a program designed to be put into the start-up sequence sets up various options for the card, including adding the memory to the system and copying the kickstart ROM into 32-bit memory. Software is also supplied to test the RAM, check the speed increase and to reboot the machine with the original 68000 in control.

This is a well built board, and has performed very well in our tests, understandably only falling behind, the GVP A530 and the Progressive 040 card. It operates well with other peripherals like external hard disks, and is a good way of speeding up your A500.



85%

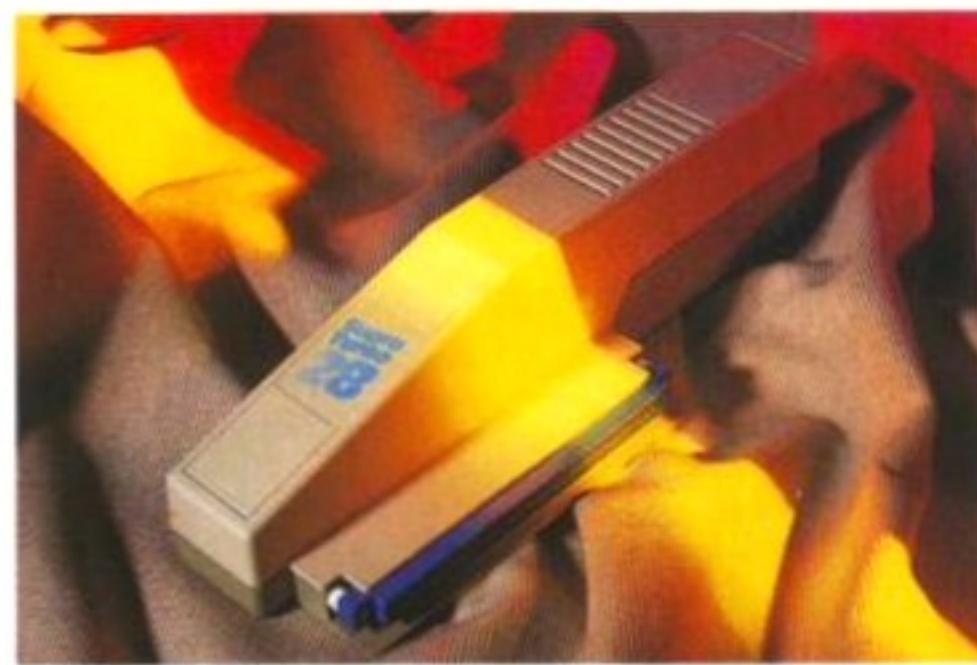
Upgrading the A500

TURBO 28

AVAILABLE FROM: FIRST CHOICE COMPUTER CENTRE 0532 319444

£129.99

Price/Performance ratio: 77



Supra's new Turbo 28 fits into the expansion slot on the A500, but includes a pass through port for hard disks.

This model is Supra's first venture into the world of accelerators. It's based around a 68000 running at 28MHz, which takes control from the 7.14MHz model fitted as standard to the A500. Although the rest of the machine still runs at the normal speed, the accelerator has a 16K memory cache which it can read data from at the higher speed. So, if you're running small programs or small sections of code, the processor can copy this to the faster memory, giving an apparent speed increase. It works with most programs, but if you come across any programs that don't like it (such as games), you can turn the accelerator off by either flicking a switch or running a program from Workbench which slows the processor down to normal speed. There's no need to reboot, and it's completely invisible to software.

This accelerator works with most peripherals, since it includes a through port for the A500 edge connector. However, it does have trouble with GVP hard drives with ROM versions prior to 3.12, because these drives attempt to transfer data directly to memory without informing the processor, which means that the processor's cache memory is not the same as the contents of the Amiga's memory. For these earlier models, a ROM upgrade will be needed. Models with later versions of the ROM will need the accelerator to be running at 7.14MHz, but adding two extra lines to the start-up sequence will automatically turn the accelerator on.

The A500 version includes a pass through socket, allowing you to put it between the Amiga and the hard disk, and the A2000 version fits in the CPU slot inside the case.

If you're looking for an A500 accelerator and you are on a tight budget, this gives a decent speed increase for the price. However, if you can afford it, you'd be well advised to consider investing in another, faster card.

GVP A530

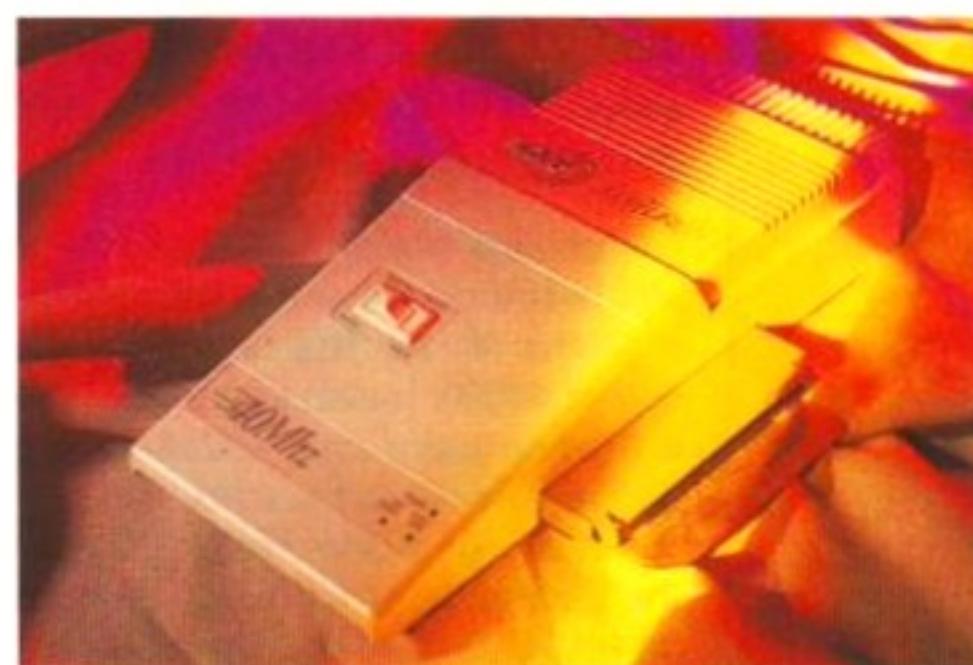
AVAILABLE FROM: SILICA SYSTEMS

081-309 1111

£499 (40MHz CPU, 1Mb RAM, 42Mb hard disk)

£699 (120Mb)

Price/Performance ratio: 30*



If you're looking at buying an accelerator and hard disk, then look no further!

This offering from GVP is more than just an accelerator, it's an all-in-one expansion package for the A500. As well as the 40MHz 68030 and optional 68882 FPU, it includes a fast SCSI controller and a choice of sizes of hard disk from 42Mb to a gargantuan 120Mb. We reviewed it in AF38, and awarded it 94 per cent and a Format Gold. Since then, the price has dropped significantly, and a 42Mb model now only costs £499.

Only 1Mb of memory is fitted as standard, and there are only two SIMM slots, which means that you will have to get rid of your existing SIMMs if you want to expand it beyond 2Mb. Up to 8Mb of RAM can be fitted by using 4Mb SIMMs.

Space for an FPU is built into the board, and this runs at the same clock speed as the CPU (40MHz), and would give a significant speed increase with programs that use this chip. Further expansion is possible through a custom expansion slot, although the only thing presently available for this is a 286 PC emulator, which will only cost you £99.

GVP have promised further cards for this slot, but these have not yet appeared. Speedwise, it's second only to Progressive Peripheral's 68040 accelerator (next review). The only major criticism is when you want to use software that won't run with the 68030, you have to turn off the accelerator with the button on the front of the drive. The problem with this is that you also turn off all the expansion memory and the hard disk interface. An option to turn off the accelerator, but keep the hard disk interface going would have been nice, but there you go.

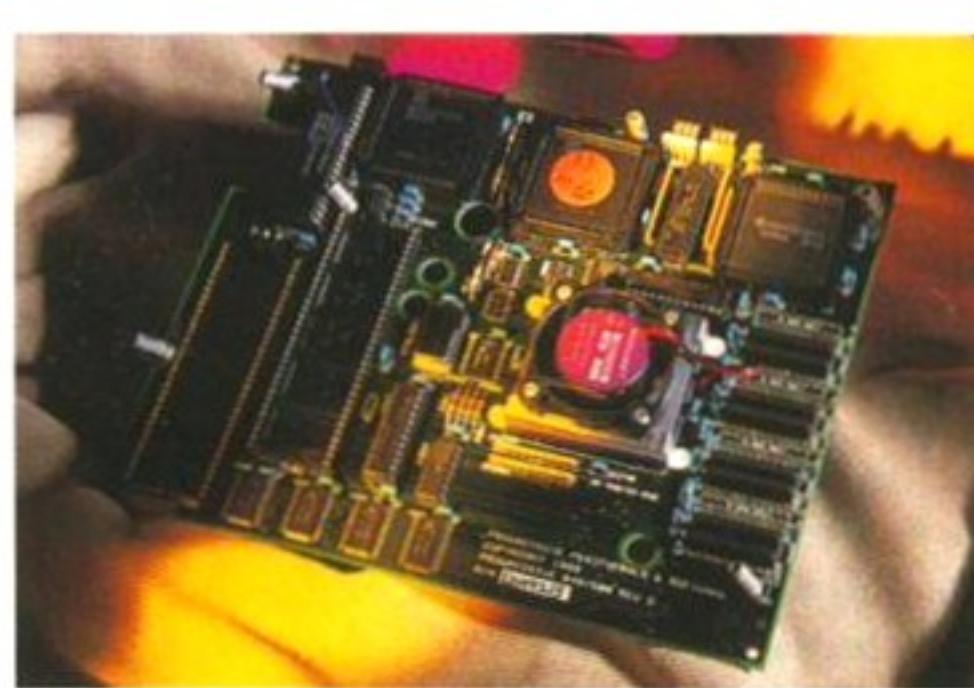
The A530 is an excellent way of expanding your A500 if you've not already invested in a hard disk or memory expansion, and the option of PC emulation for only 99 quid is worth considering. Give it a program that uses the extra power of the faster CPU and optional FPU, and it doesn't hang around either.

PROGRESSIVE PERIPHERAL'S 040-500

AVAILABLE FROM: MICRO-PACE - 0753 551888

£1,099

Price/Performance ratio: 71



Real speed freaks and A500 fans will be pleased to see that it's possible to fit a 68040 to a Vanilla A500.

This, not surprisingly, is the fastest of the A500 accelerators. It's also the most expensive. Based around a 35MHz 68040, it gives vast speed increases when you're working in a ray trace or desktop publishing program. However, the raw power of the 68040 chip is rather held back by the rest of the machine, which still runs at the slower speed.

The board can hold either 4 or 8Mb of fast memory, in the form of ZIP chips soldered on to the board, so it's not really possible to expand it yourself, unless you're extremely handy with a soldering iron. The memory is automatically added to the system at boot-up, although a couple of small patch programs are included to get the most out of the 68040. This is a rather large chip, and it does get very hot, so a small fan is fitted over it. This is powered from an extension to the floppy power cable, but it still gets rather warm after a couple of hours.

A Kickstart 2 ROM is also built on to the board, as you can't use a 68040 with Kickstart 1.3. You can switch back to Kickstart 1.3 and the 68000 (which is mounted on the board) by using a switcher program which is included, so you could use it as a very expensive ROM switcher if you wanted to.

This is very fast card, but for the price you could upgrade to a A4000/030. But if you're attached to your A500 and want to add a bit of zoom to the machine, this is the fastest A500 accelerator available on the market.

Although this is by a long chalk the fastest A500 accelerator on the market, there really isn't much point in spending this amount of money on an accelerator. After all, if you need the extra power of a 68040, you'll probably want to add things like 24 bit cards, and the A500 isn't the most expandable machine in the world.



80%



94%



85%

Accelerating the A1200

THE A1200 IS fast compared to the A500, but its 14Mhz 68020 processor can't keep up with faster machines when performing processor intensive tasks. We look at the latest accelerators for one of the new Amigas.

GVP A1230

AVAILABLE FROM: SILICA

SYSTEMS 081-309 1111

£299 (0Mb RAM, no FPU)

£499 (4Mb RAM, 40 Mhz 68882 FPU)

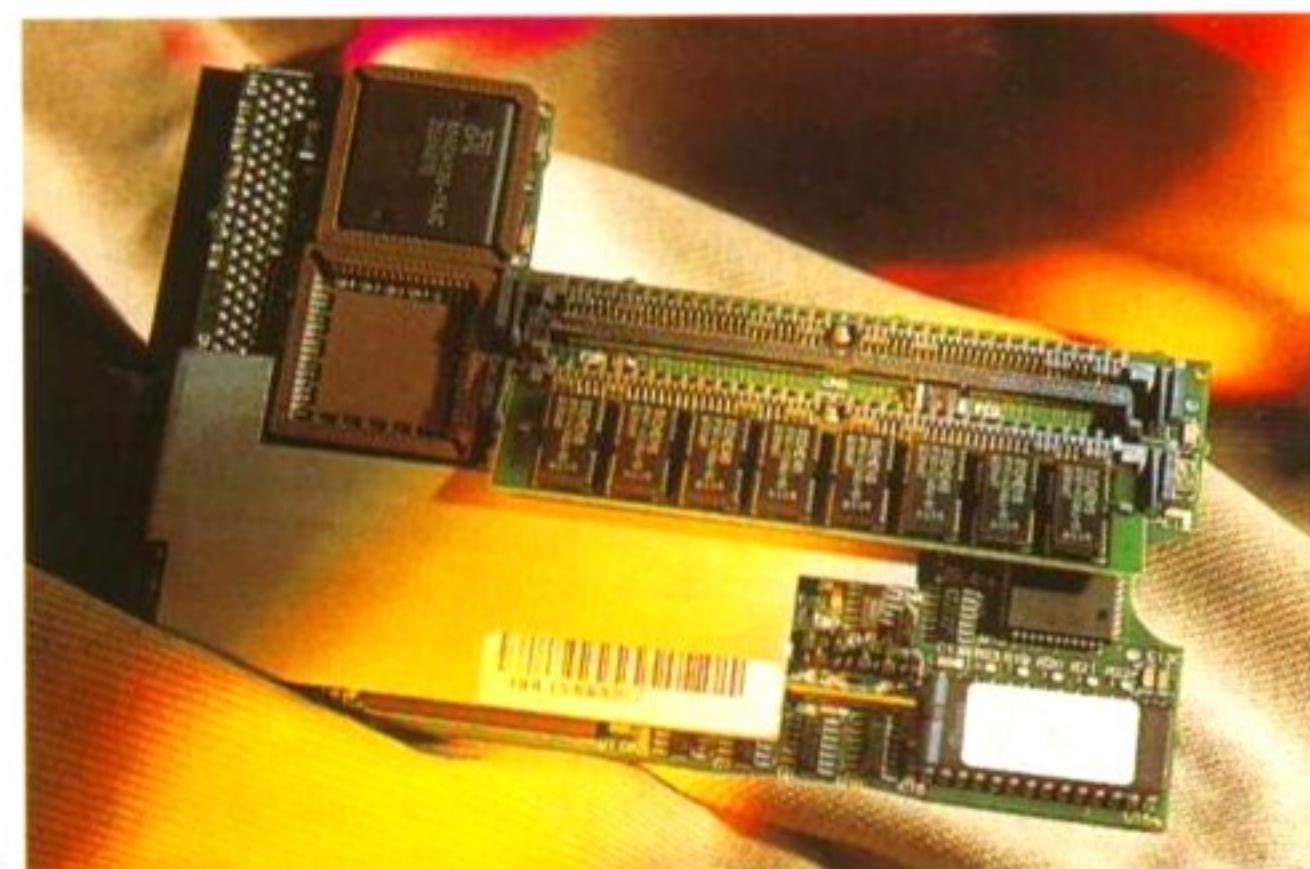
Price/Performance ratio: 54

This was the first A1200 accelerator card, and GVP have an excellent reputation for producing quality equipment. It's based on a 40Mhz 680EC030, so it's fully functional, with the exception of the Memory Management Unit, but this is only used by a few specialist programs (like *Gigamem*), so it's no great loss. There is a metal shield fitted over the CPU, which also acts as a heat sink, although 68030's don't get very hot.

Memory expansion is via two SIMM sockets located on the same side of the board as the processor. 16Mb SIMMS are now available,

STOP PRESS!

CSA's 12 gauge accelerator for the A1200 arrived too late to be included in this round-up, but there will be a full review of this next issue.



GVP's offering in the A1200 boosting race is based around a 40 Mhz 68030 chip, with space for an FPU.

but they are very expensive, and are only available by special request, as there's not a lot of demand for them. This memory is auto-configuring, so there's no need to run any programs to add into the system, and it will be available for any programs that need to boot from floppy.

A socket for an FPU is fitted on the board,

but this can only be run at the same clock speed as the CPU (40Mhz). Included with the accelerator is the usual software for switching back to the 68020, copying the Kickstart ROM into fast memory and testing the memory and other aspects of the board.



86%

MICROBOTICS MBX 1230XA

AVAILABLE FROM: INDI DIRECT 0606 43860

Price : £299.99 (0Mb, 40 Mhz), £499.99 (4Mb, 50Mhz)

Price/Performance ratio: 56

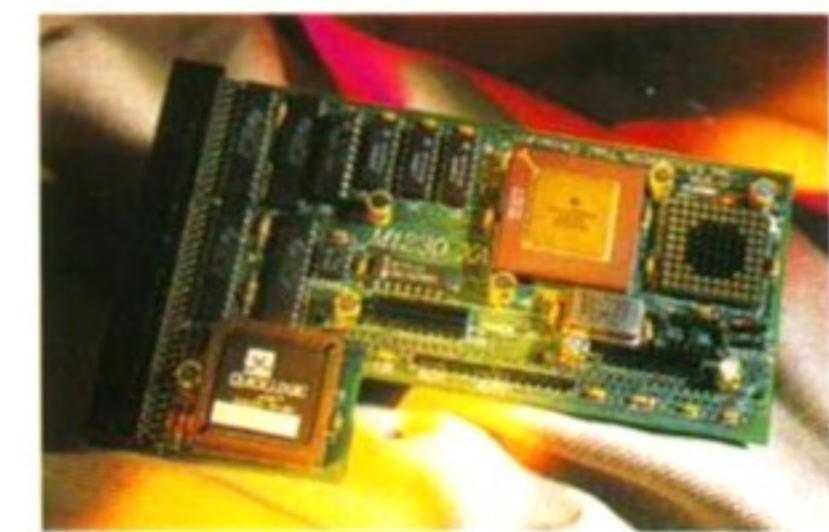
Microbotics' accelerator comes in two models, based on either a 40Mhz 680EC030 or a 50Mhz 68030. The review model has a 50Mhz 68030. It also includes a socket for a floating point unit, which can run at a different speed to the CPU.

A single SIMM socket is located on the underside of the card, taking one 32-bit SIMM, as found in the A4000. In theory, this could hold up to 128Mb of memory, but the biggest SIMM available at the moment is 16Mb, and this will cost you a small fortune.

With Workbench 3, this memory is not auto-configuring, and you need to run a program to add it to the system memory. However, this is no great problem, since all you need to do is drag a single icon into the WBStartup drawer, and the memory will be added to the system when your machine boots up.

With forthcoming newer versions of Workbench and Kickstart, this will no longer be necessary, but until then, any program that boots from floppy disk won't be able to access the extra memory held on the accelerator unless this software patch is run.

Speedwise, it has a definite edge over



A 50 Mhz 68030 ensures the the 1230XA doesn't get left behind in the speed trials.

the GVP card as it's based around a 50Mhz 68030, as against the 40Mhz one in the A1230. However, there is a cheaper model from Microbotics based around a 40Mhz 680EC030.

There is also a socket for a 68882 Floating Point Unit, which can run at a different speed to the CPU, so you could fit a cheaper 25Mhz chip, or a more expensive 50Mhz model.



89%

FACTS AND FIGURES ON HOW THEY ALL PERFORM

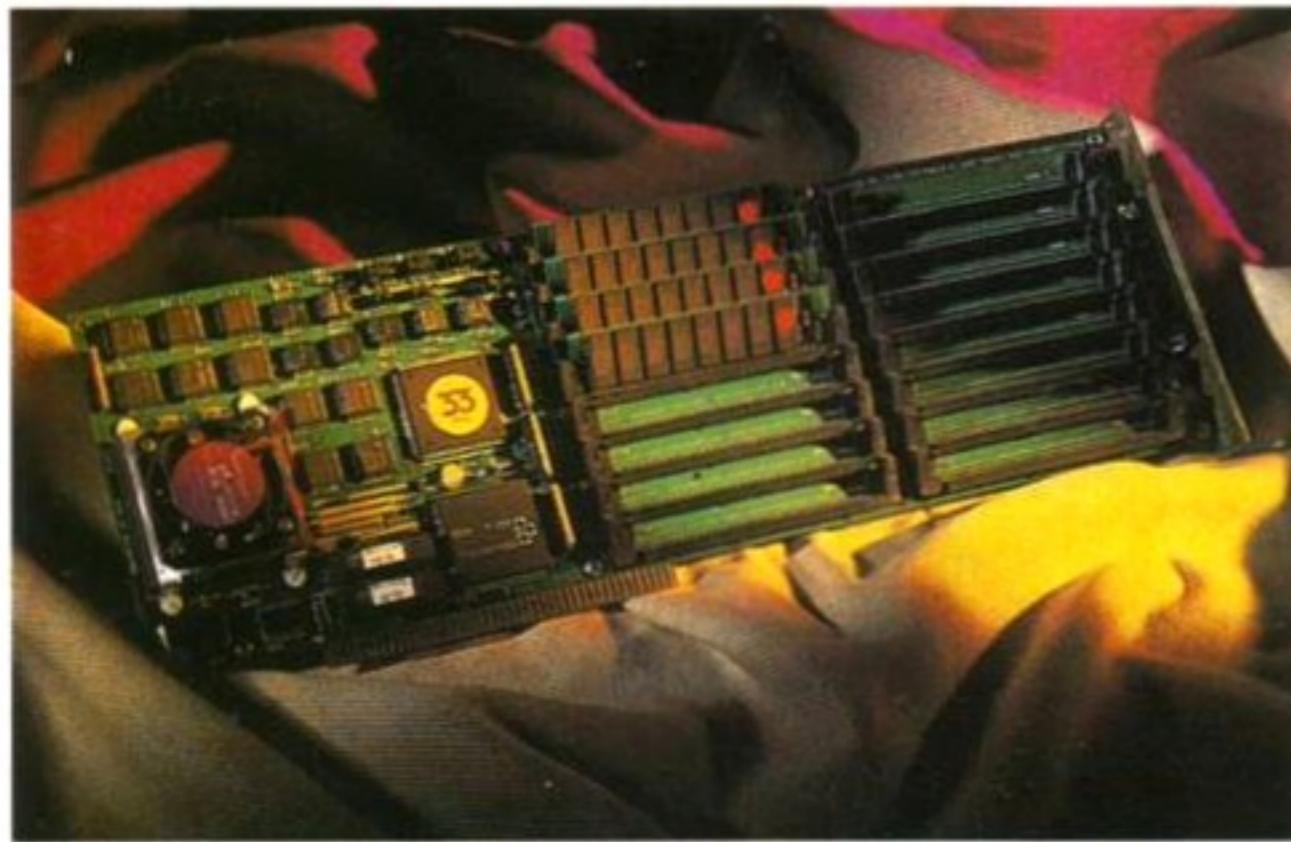
This table includes all of the figures for the tests that we've carried out on this group round-up of accelerators. Check out the brief explanation of each of the tests at the bottom

	Vista Pro ¹	ProPage ²	Imagine ³	AIBB ⁴ Integer	Graphics	FP	GForce 040 (A3000)	29	4	0.37	11.81	3.21	40.60
A500	N/A	25	11.48	1	1	1	GForce 040 (A2000)	26	4	0.25	19.07	3.39	42.95
CSA Derringer	1.04	6	1.24	6.16	2.71	13.91	Zeus 040	24	3	0.21	22.01	3.46	54.45
Progressive 040	25	3	0.30	21.68	3.41	53.4	WHAT IT ALL MEANS...						
Supra Turbo 28	N/A	9	3.59	3.02	2.42	4.69	1. The time (in seconds) to render a Vista Pro 3 scene, using shading and lighting. The appropriate version (IE: the FPU version for suitably equipped accelerators) was used.						
GVP A530	N/A	7	1.33	8.76	1.99	10.27	2. The time (in seconds) taken to redraw a page in Professional Page 4 which included compugraphic fonts and clip art images.						
A1200	N/A	14	4.59	2.66	4.05	3.04	3. The time (in seconds) to render a simple Imagine scene, again using the FPU version where appropriate.						
GVP A1230	N/A	9		9.73	5.51	12.11	4. The amount of performance improvement in three categories, determined by tests run in the Pd speed testing program AIBB. The categories are Integer maths, graphics handling and floating point maths.						
MBX 1230XA	55	5	1.12	10.59	5.80	11.89							
A3000	59	5	1.31	5.85	2.77	13.12							

Accelerating the A1500, A2000 and A3000

AGA IS ALL very well, but if you're thinking of moving up to 24-bit graphics, an A1500, A2000 or A3000 is still suitable. However, an unexpanded A1500 will be extremely slow, and even an A3000 needs more power to really get serious with 16 million colour graphics. So, which accelerator would give you the greatest speed increase?

ZEUS 040
AVAILABLE FROM: MICRO-PACE UK (0753 551888)
£2,099 (16Mb RAM)
£1,199 (0Mb RAM)
Price/Performance ratio: 38*



This card is an all in one expansion for the A1500/A2000. As well as a 33Mhz 68040, it provides provision for up to 64Mb of memory, and a SCSI 2. It's the fastest of the boards for the big box Amigas, and the SCSI 2 is extremely fast, especially when used in conjunction with a SCSI 2 disk.

It fits into the CPU slot of the Amiga A1500 and A200, and has provision for attaching a hard disk on to the back of the card, so it won't take up any of your precious expansion slots.

This is the fastest card in the roundup. It's marginally faster than the GVP G-Force 040 card for the A1500/A2000, has better expansion capabilities (with the option to fit up to 64 Mb of memory), and has the extra speed of the SCSI 2 interface (as long as you're using a SCSI 2 drive). If you want to keep using your A1500/A2000, and are perhaps upgrading it to a 24-bit system by adding a card such as the Retina, OpalVision or Toaster, this is the one to go for.

This card is expensive, but it's an excellent all in one expansion for the A1500 or A2000. If you don't want AGA, this will give you a machine that can do complex number crunching, ray tracing and desktop publishing with one hand tied behind its back



G-FORCE 040 (A1500/A2000)

AVAILABLE FROM: SILICA SYSTEMS 081-309 1111
£1,299 (4Mb RAM)

Price/Performance ratio: 50*



The G-Force 040 includes an extra serial port, which could be useful if you're running a BBS.

This GVP manufactured card is based on a 68040 running at 33Mhz, with a SCSI controller built in. This card is also unique because it includes an extra parallel and serial port, which can be accessed directly by the CPU, for very high speed data transfer. It's not as fast as the Zeus, but it's by not slow. Memory expansion is by four SIMM slots, which can hold up to 64Mb of memory using GVP's own custom 16Mb SIMMs, but to put it to this capacity would cost a significant sum.

Also included on the board is a custom GVP expansion slot, designed to hold its own 24-bit graphics card. Unfortunately, this has not yet been finished, and it's the only thing which could use this slot.

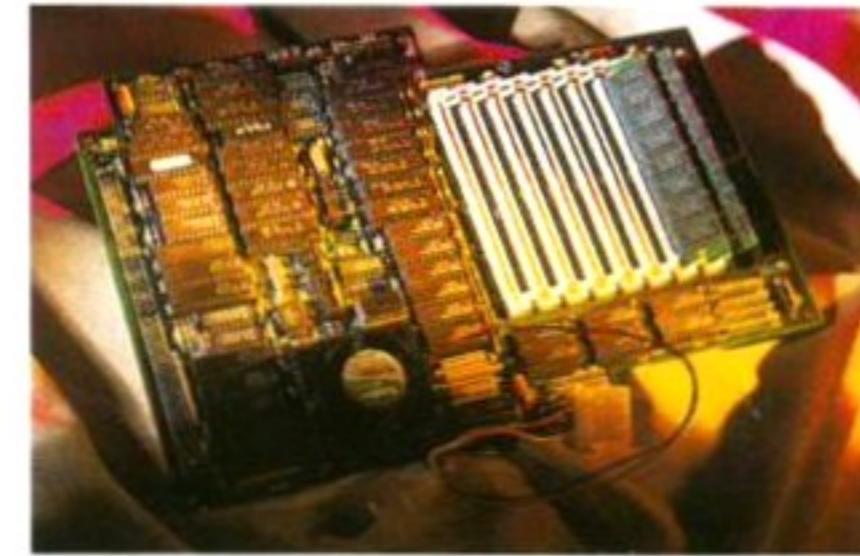
A good combination of accelerator and hard disk interface, although it's slightly slower than the Zeus. The extra serial and parallel ports could be useful. It is cheaper than the Zeus, and is definitely worth considering if building a professional system.



G-FORCE 040 A3000

AVAILABLE FROM: SILICA SYSTEMS (081-309 1111)
£1,499

Price/Performance ratio : 37



The A3000 is already a pretty nippy machine, but with one of these fitted, it flies like a swift.

This is the only A3000 accelerator in this roundup, since it's already a fast machine. Based on a 28Mhz 68040, it fits in the fast slot on the motherboard. Memory is added via eight SIMM slots, allowing a maximum of 8Mb to be fitted. Fitting the card is a pain because of the design of the A3000, not the card. To fit the card, you need to remove any expansion cards, disconnect both hard and floppy disks and disconnect the power supply from the motherboard. Fortunately, it's not an operation you need to carry out often, since software is included to switch back to the original 68030.

The 68040 chip gets hot, but a fan is fitted. Even with this running, the board gets hot after several hours of use. However, it still works flawlessly, and was used extensively to produce this month's ray traced cover images.

It does give the A3000 a boost speed wise, but it's not as fast as many A2000 accelerators. At this price you may be better off moving on to an A4000.



CHIP CHAT

All the accelerators here use an improved variety of CPU (Central Processor Unit), which is the brain of your Amiga. So what do all these numbers mean?

68000 – The chip the A500, A1500 and A2000 are based on. It usually runs at 7.14Mhz, though models which run at a faster clock speed are available (as in the Supra Turbo 28). In its day it was fast, but in compared to the Motorola's newer chips, it's very slow.

68010 – Slightly improved version of the 68000, which runs programs about 10 per cent faster with no alteration to the clock speed. No accelerators use this, as it's not really worth the extra expense of fitting one.

68020 – Used in the A1200, running at 14.28Mhz. Although the clock speed is doubled, the performance is improved by three to four times by a redesign of the

chip, and the way it carries out the program's instructions. Also includes an instruction cache (small bit of memory built into the CPU) so for small programs or loops within programs, the processor doesn't have to get the next instruction from the RAM memory of the Amiga, which speeds things up yet again.

68030 – Used in the A4000/030. This is an enhanced version of the 68020, which runs at faster speeds (up to 50Mhz) and includes a data cache and an instruction cache. Again, the chip was slightly redesigned to speed up the processing of instructions.

68040 – Used in the A4000/040. Another complete redesign produced this chip, which includes 4Kb of data and instruction caches, a built in FPU (Floating Point Unit) which handles maths calculations. This chip gets hot, so has a fan.

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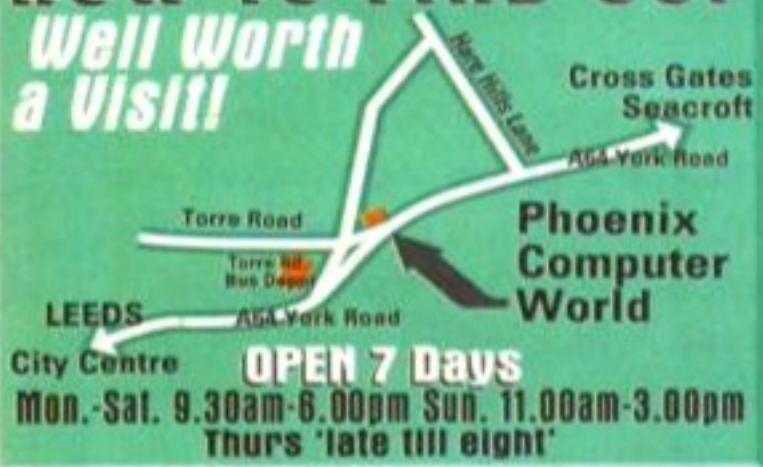
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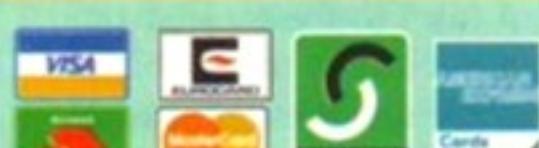
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Chip RAM • Fast RAM

A4000-030 80Mb	1	1	£959.99
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A4000-030 80Mb	1	0	£1019.99
A4000-030 80Mb	2	4	£1069.99
A4000-030 120Mb	2	2	£1160.99

All the above include FREE next working day delivery.

Prices are correct at the time of going to press

NEED EXTRA FAST RAM?

NOW AVAILABLE!! 32-Bit Memory Modules
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FEATURES INCLUDE: 68020 Processor Running at 14 Mhz • 2Mb Chip RAM (expandable) 256 colours on screen from a 16.8 million colour palette • Full Amiga Key board (with Alpha numeric key pad).

CW PRICE £369.99

A1200 HARD DRIVE UPGRADE PACKS

All 2.5" IDE Hard disks offer ultra fast access time and are supplied from leading manufacturers such as western digital/seagate. Pack also includes cable screws and software.

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1 year warranty on all models!!

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INCLUDES: the 40MHz 68030ec-accelerator chip, optional 40MHz FPU (68882) - up to 32 Mb

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Memory expansion for the A1200, features include: Zero wait state • Optional Ultra fast FPU (50Mhz) • Real time battery backed clock • Low power • Optional FPU disable switch

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PC 4 Mb (25 Mhz 68882 FPU) £279.99

PC 4 Mb (33 Mhz 68882 FPU) £289.99

PC 4 Mb (40 Mhz 68882 FPU) £299.99

PC 4 Mb (50 Mhz 68882 FPU) £339.99

includes real time clock

A 1200 ACCESSORIES

CW A1200 real-time clock easy to fit 1 yr warranty £15.99

CW A1200 600 HD prep disk £13.99

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Dust Covers £5.99

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The Microbotics M1230XA is available in a 40Mhz version & a 50 Mhz inc memory management unit. This peripheral can expand up to 128 Mb of FAST 32-bit memory. Existing MBX users can transfer their current memory and fpu and includes real-time clock

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M1230XA 40 Mhz 4Mb	£428.99
M1230XA 40 Mhz 8Mb	£569.99
M1230XA mmu 50 Mhz 0Mb	£349.99
M1230XA mmu 50 Mhz 2Mb	£428.99
M1230XA mmu 50 Mhz 4Mb	£499.99
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A RAM module can expand your chip RAM up to 2 Mb by using the trapdoor expansion port. All our boards carry a full 2 year no quibble replacement guarantee. It's never been cheaper to upgrade!

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PA 601-unpopulated-0Mb £24.99

PA 6020 2 Mb PCMCIA card.. NEW LOW PRICE £114.99

PA 6040 4 Mb PCMCIA card.. NEW LOW PRICE £169.99

A 570 CD-ROM

Long awaited, superb performance, tempting but too expensive-NOT ANY MORE!!!! This excellent interface for A500/500+ owners is now at a price that YOU can afford. Use it to exploit stunning software packages or simply to listen to your favourite tunes

WHAT YOU GET !!!

WHAT YOU PAY

£149.99

• A570 CD ROM • Fred Fish Disks 1/660 • Sim City. NB you need at least 1Mb of chip ram check with telesales before ordering

AMIGA'S

'CARTOON CLASSICS PACK'

It's Back and it's bad - the pack they tried to kill returns for its final mission - don't miss this golden opportunity to acquire one of the best ever home computers, features include: 1 Mb of RAM Workbench 2.04 • TV modulator • Lemmings • Captain Planet • The Simpsons • Deluxe Paint III

CW PRICE £194.99

'THE WILD, THE WEIRD & THE WICKED'

1 Mb A 600 as standard and includes the excellent value Software titles: Deluxe Paint III • Formula One Grand Prix • Putty • Pushover

CW PRICE £224.99!

A 600 2Mb (incl. above software) £264.99

A600 Base Pack £194.99

A 600 2Mb (incl. above software) £234.99

'EPIC • LANGUAGE PACK'

1 Mb A 600 as standard and includes 20Mb HARD DRIVE the excellent value Software titles: Deluxe Paint III • Trivial Pursuit • Epic • Myth • Rome

CW Price £359.99!

A 600 2Mb + 20 Mb Hard Drive £399.99

(both include the above detailed software)

EXTRA MEMORY-Only £39.99 per Mb.

MONITORS

All monitors are supplied with a FREE cable for connection to your Amiga.

WHAT YOU GET !!!

WHAT YOU PAY

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COMMODORE 1942 14" Monitor Ideal for A1200/4000 • AGA • 28mm Dot Pitch • Tilt 'n' swivel stand • Built-in Stereo Speakers • Works with ALL Amigas in most resolutions • 1 yrs on-site warranty

CW PRICE £289.99

COMMODORE 1940 14" Monitor Specification as above, but this one has a 39mm dot pitch

CW PRICE £394.99

Col. multi-sync monitor works in all A1200/4000 modes inc low-res.

ADD £29.99 if you would like COMPUTER WORLD STEREO SPEAKERS bundling with your order.

MONITOR ACCESSORIES-

14" dust covers £4.99 14" tilt & swivel stand £13.99

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GVP IMPACT SERIES II Hard Drives, the fastest Hard Drive/Controller for the Amiga. Features Game Switch, external SCSI port, FAAASTROM SCSI Driver, GVP's custom VLSI chip and internal RAM expansion up to 8 megl Units use high specification fast-access QUANTUM Hard Drives coming with 2yr. guarantee.

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A500-HD8+ 80 Mb £389.99

A500-HD8+ 120 Mb £564.99

A500-HD8 controller only £179.99

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Series II Hard Disk Controller/RAM card £122.99

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BOOST YOUR AMIGA'S PERFORMANCE

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Supplied with **ALL** printers containing 1.8m std. printer cable, printer ribbons/cartridge and 250 sheets of paper absolutely **FREE**.

COMPUTER WORLD ARE A
"CITIZEN SUPER DEALER"

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Swift 240 Mono

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Swift 200 Colour

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Swift 200 Mono

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Citizen Auto sheet feeder

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Citizen printers come with 2 year warranty. + V.2.0 Amiga driver disk

BUBBLE JET

MAJOR DEALER • MAJOR DEALER

Canon Canon

Canon BJ 10SX

NEW NEW NEW
£227.99

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95% Amiga Gold Award... £349.99

Feature include: 300 dpi. • Min 80 page Auto sheet feeder • minimum 3 pages per minute **SUPER VALUE!**

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NEW £POA

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£429.99

80 column bubblejet provides laser quality output.

Canon BJ 330

£499.99

136 column bubblejet.

Canon BJ ex/sx cartridges

£17.99

Canon BJ 200 cartridges

£24.99

BJ 10 ex/sx Autosheet feeder

£49.99

star MICRONICS star MICRONICS star MICRONICS

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REDUCED £155.99

LC24-100

£189.99

LC-20

£132.99

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£224.99

LC-200 Colour

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LC24-200 Colour

£264.99

XB24-200 Colour

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STAR LC200

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STAR LC24-200

£62.99

STAR LC24-20

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STAR SJ48

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HEWLETT PACKARD

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Superb printers HP printers come with 3 year warranty.

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HP black Ink cartridge

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HP colour Ink cartridge

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We have a large range of high quality printer accessories for all the printers we sell including: dust covers from £2.99 • Ink cartridges from £13.99 • Mono ribbons from £3.50 • Colour ribbons from £7.99 • Printer stands from £7.99

MICE & TRACKBALLS

GOLDEN IMAGE-Mega Mouse £12.99

Received 90% Amiga Format Gold Award

Mega Mouse 2 £16.99 **NEW**

Newly designed, 400 dpi, an absolute must!!

Optical Mouse £28.99

High precision, pointing device.

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Infrared-Cordless-Mouse £47.99

(Rechargeable top selling innovation.)

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Don't damage your Amiga's ports! This device saves wear and tear makes switchover **FAST**.

DISKS

Don't confuse these quality disks with others currently available. 3.5" 100% certified error free 70% clip. All disks include **FREE** high quality CW labels.

10.....£4.99 200.....£72.99

25.....£12.99 500.....£174.99

50.....£22.99 750.....£259.99

100.....£39.99 1000.....£339.99

Dysan Branded disks- Now available in rainbow packs with clear plastic box + 10 labels at the same price as standard

10.....£5.99 100.....£52.99

50.....£28.99 500.....£249.99

1000 Computer World Disk Labels £9.99

SOFTWARE

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Arena Accounts	£82.99
Personal Finance	£29.99
Manager Plus Home Accounts 2	£39.99
System 3	£39.99
System 3E	£54.99
Cashbook Combo	£54.99
Day by Day	£22.99

ANIMATION

Deluxe Paint 4 AGA	£89.99
Morph Plus	£159.99
Real 3D Classic	£77.99
Real 3D V2	POA
Take 2	£38.99
Personal Paint	£46.99

CAD/DRAWING

X-CAD 2000	£99.99
X-CAD 3000	£249.99

DATABASE

Mailshot Plus	£36.99
Superbase 2	£19.99
Superbase 4	£102.99

MUSIC & SOUND

KCS Level II v3.5	£219.99
Bars and Pipes Pro V2	£249.99
Kits for Bars and Pipes	£44.99
Super Jam v1.1	£89.99
The Patchmeister	£82.99
Triple Play Plus	£164.99
SyncPro	£184.99
One Stop Music shop	£564.99
AMAS 2	£74.99
Clarity 16 (16 bit sampler)	£114.99
Quartet	£39.99
Stereo Master	£29.99
Videomaster	£52.99
Deluxe Music not v20	£52.99
Megamix Master	£29.99
TechnoSound Turbo	£29.99
Techno Sound Turbo 2	£38.99
The Music Librarian	£28.99

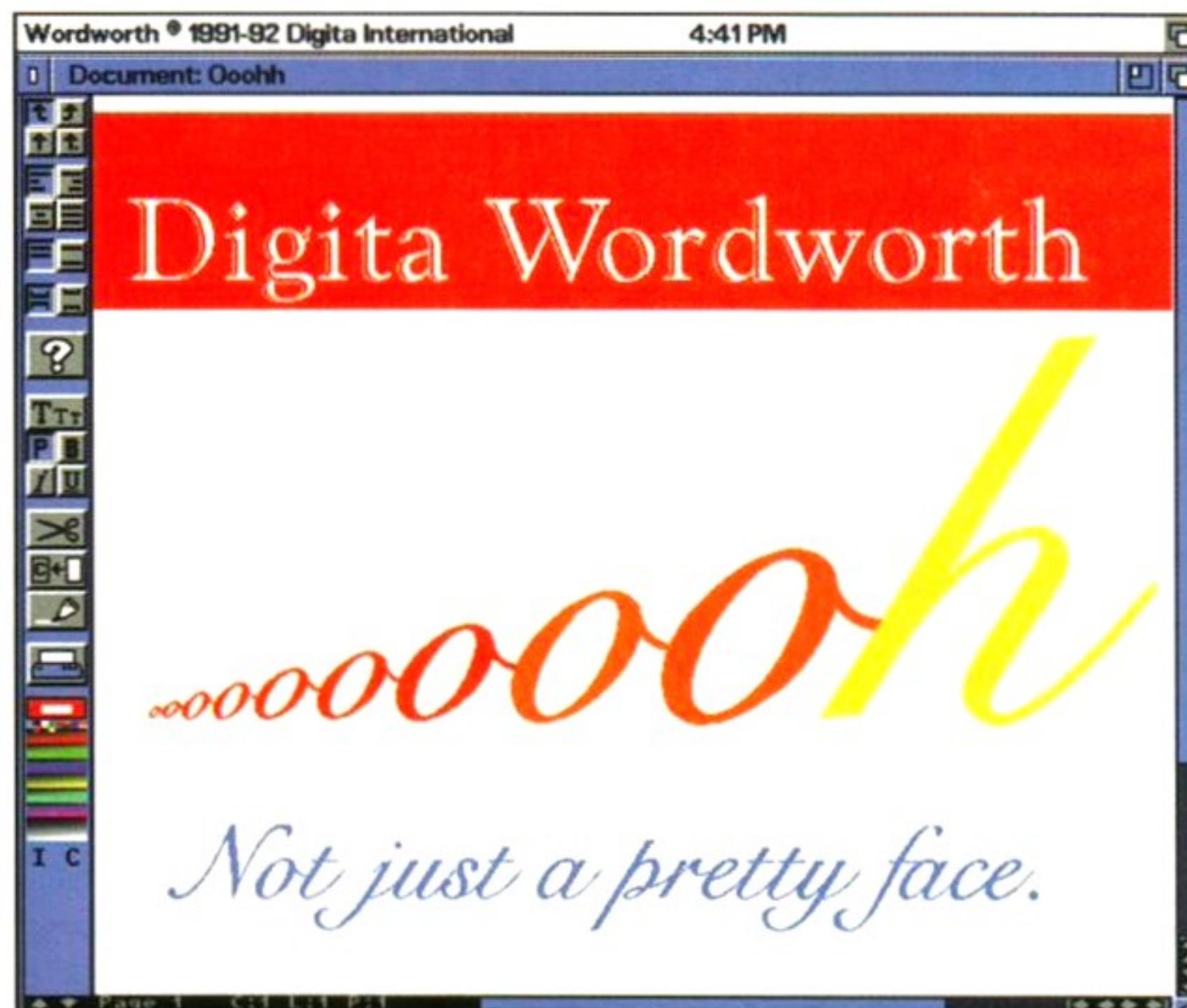
PRESENTATION & SLIDESHOW

Can Do V2	£99.99

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AGA
VERSION

Nine reviewed One winner*



* Word processor roundup, Amiga Shopper, May 1993

(Just thought you'd like to know)

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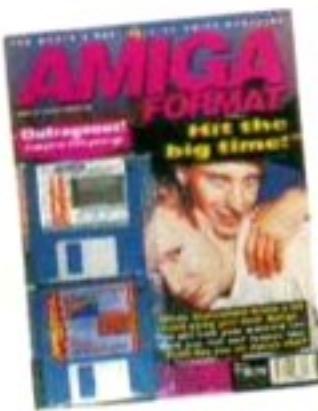
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STOP! YOU NO longer need to spend hours searching for that review you were sure was in *Amiga Format* three months ago – all the information you need is on the next six pages. We've collated and collected a comprehensive list of all the reviews, tests and round-ups of hardware, serious software, games reviews, educational reviews and Coverdisks. So for the 144,330 of you who buy *AF* every month, read on and see what you've missed (or for on-the-ball Amiga owners, what you can still get by ordering back issues – see page 150).



ISSUE 37

ON SALE IN JULY 1992

NEWS: a number of new Amiga models are promised by Commodore US, the CDTV is bundled with a keyboard, mouse and disk drive for the first time, and Commodore UK's MD Steve Franklin steps down and is replaced by Kelly Sumner.

FEATURES: we looked at how people put their Amigas to work – who they are and what they are doing with them. Then we covered PC emulation and showed you how to make your Amiga work with PC software, and predicted the future of graphics with *Imagewriter* – a stunning image processing program. Plus: at the wheel with driving games – a round-up of the best of the bunch.



ISSUE 38

ON SALE IN AUGUST 1992

NEWS: the A570 CD-ROM drive arrived; Philips launched CD-i into the UK; and Commodore's new boss, Kelly Sumner, told us what plans he had in mind for the future of the Amiga.

FEATURES: we showed you how you could keep your A500 alive and kicking with expansions. And for those who were thinking of buying a monitor, mouse or a modem we gave you the low down on the best hardware on the streets.



ISSUE 39

ON SALE IN SEPTEMBER 1992

NEWS: A600 and A3000 prices were slashed; we asked if the A4000 was the new Amiga; and we collated games news for a special round-up.

FEATURES: with the A570 CD interface now on sale we showed you how to turn your Amiga into a CDTV and also reviewed every CD so far released. Plus 10 pages of this issue were packed with printers, all put to test.



ISSUE 40

ON SALE IN OCTOBER 1992

NEWS: Commodore's successful Cartoon Classics pack was replaced with two new A600 games and educational bundles. *Sensible Soccer* was reported to be paving the way

towards lower-priced CD software. And we told you what to expect to see at The Future Entertainment Show – 1992's biggest computer exhibition in Europe.

FEATURES: for artists at all levels we prepared a step-by-step tutorial on getting the most out of *Deluxe Paint*. And if you didn't want to draw, we showed you how you could still have amazing images with a look at the best of Amiga digitisers. But if words were more important to you than pictures, our six-page feature on word processors kept you at your keyboard.

A year in the life of the Amiga

It's round-up time! Here's a comprehensive guide to all the reviews, games and features from the last 12 months of *Amiga Format*.



ISSUE 41

ON SALE IN NOVEMBER 1992

NEWS: launched: the Amiga 1200 – faster, more powerful and with more colours at a new price level. Morphing, the new graphics technique, hits the Amiga. Plus: CDTV drops to a competitive price at £399.

FEATURES: we stripped down and checked out the new top-dog Amiga 4000. And we showed you how to stay safe with our guide to keeping clear of computer viruses.



ISSUE 42

ON SALE IN DECEMBER 1992

NEWS: price rise shock – all Amigas set to go up in the new year; and Commodore says the A2000 is not to be replaced.

FEATURES: we had an extra special GameBusters with a run down of the best games ever and how to play them. Then we looked at the year ahead and asked the top names in Amiga software and hardware what plans they had for 1993. And we told you what PCMCIA meant to the Amiga. AMOS was on the Coverdisk, so we started the first in a long line of 'Mastering AMOS' features to help you write your own professional-looking programs.

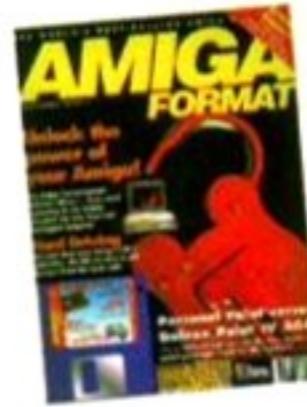


ISSUE 43

ON SALE IN JANUARY 1993

NEWS: the first example of A1200-specific software – *Deluxe Paint IV AGA* – was announced and, for the power hungry, the first A1200 booster was launched.

FEATURES: we revealed all the innermost secrets of the Amiga machine – from how a chip works to how a monitor displays a picture. And we set the agenda for what should happen to the world of the Amiga.



ISSUE 44

ON SALE IN FEBRUARY 1993

NEWS: "Our interests couldn't be in better hands", said Commodore as the *Amiga Format* Live '93 Show was announced for May. And we warned: the A1200 has teething problems as some sub-standard TV modulators go on to the market.

FEATURES: this month our coverage was led by choosing and using the best software, as we showed you how to unlock the power of your Amiga. Plus we looked at five new hard drives reviewed and rated.



ISSUE 45

ON SALE MARCH 1993

NEWS: the first A1200 pack appeared with Ocean's *Sleepwalker* and a Comic Relief edition of *Amiga Format*. The A1200 also got a hard drive giving you 60 or 80 extra Mb!

FEATURES: we explored the longest lasting buzzword in computer history – multimedia – and found out what it meant to you. An on-line gaming – we showed you how you could get communal with fellow modem-owning Amiga gamesplayers.



ISSUE 46

ON SALE IN APRIL 1993

NEWS: Commodore's A4000/030 mid-range machine was here at last; the roaster chip was promised for the OpalVision video suite; plus 1992 sales figures revealed record scores for the Amiga.

FEATURES: we told you why we think Cyberpunk is the fiction of the future and how it will affect you. Then we covered morphing: how it's done and how much use it is. Plus we had an IDE round-up telling you how you could have your hard drive on the inside of your Amiga.



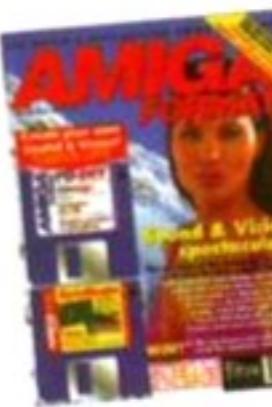
ISSUE 47

ON SALE IN MAY 1993

NEWS: after just 10 months as Commodore UK's MD, Kelly Sumner resigned – we told you what his move meant. Plus we took a trip to the American World of Commodore show in New York – and asked: 'Is it

so different on the other side of the Atlantic?' Then we looked at the Amiga in a professional studio à la Evelyn Glennie.

FEATURES: we went on another trip, but this time all around the world on an intercontinental guide to the Amiga. We also test drove the new mid-range A4000/030, and the best of floppy drive buys.



ISSUE 48

ON SALE IN JUNE 1993

NEWS: showing off again, we reported how well the *Amiga Format* Live '93 Show went, with thousands of Amiga users pouring through the doors each day to play new games, see demonstrations and meet the teams of *Amiga Format*, and sister magazines *Amiga Power* and *Amiga Shopper*.

FEATURES: we gave you a Sound & Vision spectacular with two Coverdisks including a video titler, music sequencer and animation player, and then put together 16 pages of tutorials for a complete PD do-it-yourself package.

IT ALL ADDS UP

We've added the statistics for issues 37-48, and we've come up with some great figures:

Total number of pages	2,664
Number of games reviewed	194
Number of <i>Format Gold</i> games	20
Average score of games	70.34%
Number of budget games reviewed	96
Average score of budget games	70.21
Number of <i>Format Gold</i> budget games	2
Number of serious soft/hardware reviews	176

Coverdisks

Out of the past 12 issues of *Amiga Format*, eight had two disks and four had one disk on the cover, bringing you a huge selection of high quality software that would otherwise cost you a small fortune. And don't forget – if you subscribe to AF you will now receive an extra disk every month packed with software and useful utilities. Here's a run-down of the Coverdisk packages we've had in the last year...

COMPLETE FULL-PRICE PROGRAMS

We not only put complete programs on the cover, but we also had in-depth editorials on how to use and make the most of them.

Program	Issue number	What it was
AMOS	42	Programming language
Animation Station	37	Powerful tool that will let you create and run animations
Devpac 2	39	Machine code package for games writing
IntroCAD	38	Computer aided design program
Prodata	43	Database from Arnor
TVText	40	Video titling package
Scribble	41	Full word processor

SERIOUS SOFTWARE

Anything that's not a game or education software comes under this heading and we've grouped them in categories often used by Americans: Creativity (C) includes design and DTP; Productivity (P) means things like business software, word processors, spreadsheets, and databases; and Utilities (U) are tools. We've also got categories for programming (L), Books (B) and, of course, Format Golds (FG).



The professional version of the extended basic programming language, *Amos Pro* was the highest scoring software at the time with 97 per cent until...

COVERDISK GAME DEMOS

Top names in games were squeezed on to the disks, just to please you.

Atoms	46	Multiplayer puzzler
B17 Flying Fortress	47	MicroProse's flight simulator
Caesar	39	God-like strategy game
Chaos Engine	40	Action thriller from the Bitmaps
Charlie Chimp	46	Three-level platformer
Disposable Hero	47	Shoot-em-up
Dong	45	Cute platform game
Hired Guns	44	Cyberpunk role-playing adventure
International Sports Challenge	37	Diving game from Empire
Legends of Valour	40	US Gold's adventure RPG
Lemmings 2 - The Tribes	42	Cute puzzler
Nigel Mansell's World Championship	41	Speed around the Grand Prix circuits
Quicksilver Pinball	39	Pinball game
Syndicate	48	Bullfrog's futuristic shoot-em-up
The Simpsons - Bart vs the World	43	Platform puzzler

COVERDISK SERIOUS DEMOS

We never forget that most of you have your serious side too, so we brought you more dead good demos

3D Construction Kit 2	38	Domark's 3D game making demo
Adorage	48	Video effects titler
Bridgeball	37	Puzzler platform game
Devpac	44	Source code to read a four-button joystick
Digital Illusions	45	Image processor
Fractal Goblins	46	Educational fractal demo
Multimedia	45	Multimedia program examples
Noddy's Playtime	43	Education paint package
Personal Finance Manager Plus	38	Accounts system from Microdeal
ProTracker v3.10B	48	Sample sequencer for composing music
Real Things Animals demo	39	Complete animbrush
View	48	Animation player
Voltage Controller	44	AMOS-controlled hardware project
Wordworth 2	41	Document processor

COVERDISK UTILITIES

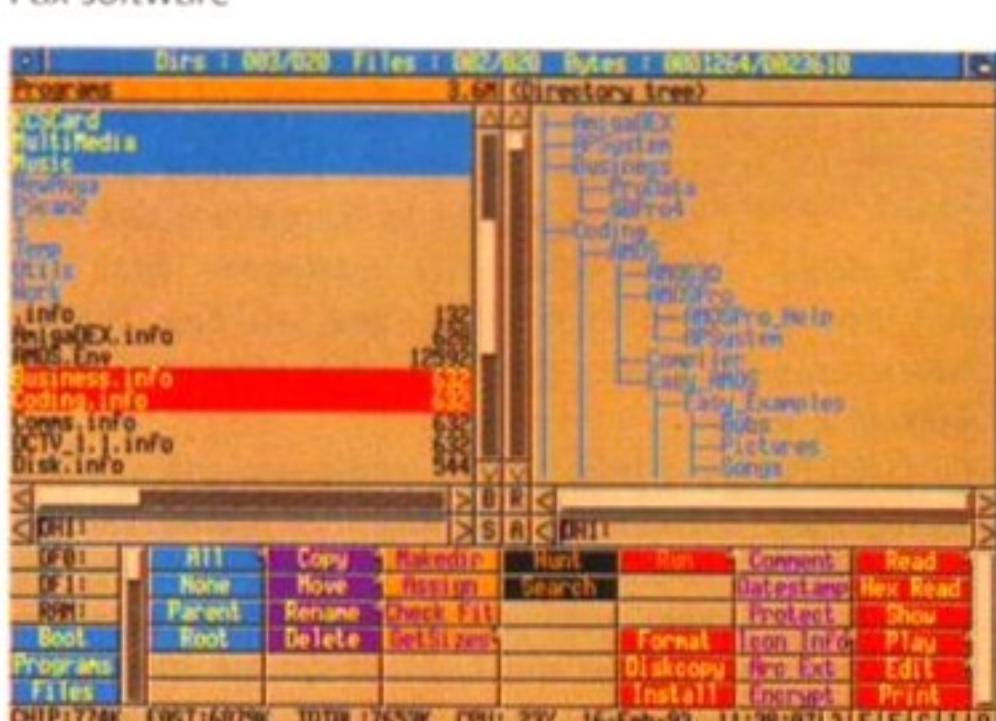
You can never have too many useful utilities, so we keep giving them to you.

Animation utilities	37	Various uses
Auto disk logger	37	Software tracker
Bullfrog Convert	43	DPaint image converter for use with Devpac 2
Check v4	46	Shell utility that checks for your Kickstart version
Events Diary	37	Handy startup sequence utility
Cross-DOS	40	Make use of PC graphics, text files and samples
Disk Logger 1.3	38	Catalogue what is on your floppies
Mode Switch	39	Utility for switching between American NTSC and European PAL screen modes
Start-up sequence utility		
The Degrader	38	Downgrades your system to run more software

COVERDISK FIXES

When you were in a fix, we helped you out with this trio:

Alien Breed Fix	43	Modifier for the game
BootXFix	44	Fixer for Coverdisk 41b
EOTB2 Char Ed	38	Game cheats utility



...Directory Opus 4 arrived from INOVatronics and scored a massive 98 per cent.

Helios Forth	Helios Software	39	163	76%	P
Programming language					
Illinois ProCode	Works Software	48	142	75%	U
Label printing utility					
ImageFX	GVP	45	122	92%	C FG
Image processing package					
Image MasterAmiga Centre Scotland	37	156	89%	C	
Image processing program					
Insider Guides	Bruce Smith	46	144	90%	B FG
Reference guides					
Mini Office	Europress	39	182	84%	P
Integrated office programs					
Mini Office	Europress	40	158	50%	P
Word Processor					
Morph Plus	ASDG	42	219	90%	C FG
Image processing package					
Order	South Hams Software	37	164	65%	P
Relational database					
Order 2.05	South Hams	47	140	80%	P
Database					
PageSetter 3	Gold Disk	44	146	90%	C FG
Desktop publisher					
Pen Pal	Softwood	40	155	85%	P
Word processor					
Personal Paint	Cloanto	44	136	79%	C
AGA paint & image processing package					
Personal Write	Micro-PACE	47	124	70%	P
Word processor					
Plants For All Seasons	ARK	48	129	90%	P FG
Horticultural database					
ProPunter	DGA software	45	136	82%	C
Expert system					
Professional Calc	Gold Disk	39	185	92%	P FG
Spreadsheet					
Professional Draw 3	Gold Disk	39	174	92%	C FG
Structure drawing software					
Professional Page 4	Gold Disk	45	122	94%	C FG
Desktop publishing					
Protext 5	Armor	40	152	80%	P
Word processor					
Quickwrite 3.1	New Horizons	40	155	50%	P
Word processor					
Rave	The Digital Muse Ltd	47	132	79%	C
Sequencer					
Real 3D version 2	RealSoft/Activa	46	138	96%	C FG
3D modelling and rendering					
Real Things - Dogs	Living Data	43	146	75%	C
Animated clip art					
Scala MM200	Digital Vision	39	154	87%	C
Presentation software					
Scribble Platinum Edition	MSS	40	156	79%	P
Word processor					
Sequencer One Plus	Gajits	37	162	81%	C
MIDI sequencer					
Superbase Professional 4Oxxi-Aegis	39	185	90%	P FG	
Database					
The Music Librarian	ARK	48	129	82%	P
Music database					
The Publisher	The Disc Company	43	150	92%	C FG
Desktop publishing					
Transwrite	Gold Disk	40	156	85%	P
Word processor					
TruePrint/24	ASDG	41	201	68%	U
24-printing utility					

EDUCATIONAL SOFTWARE

Most education software seems to make learning fun, but whatever it is, it also needs to be a worthwhile teaching tool. Over the year we've reviewed quite a selection.

ADI Education Software				
(French/Maths/English)				
Europress	44	165	75%	
ADI Junior				
Europress	47	126		
Counting (4-5) 80%, Counting (6-7)		72%		
Reading (4-5) 74%, Reading (6-7)		76%		
Compendium Six				
GeniSoft	37	173	90%	
Kids Type, Calendar Quiz, Game, Set and Match, Weather Watcher, Where is it? What is it?, Word & Numbers				

TV Paint 2	TecSoft	47	138	92%	C FG
True colour art package					
TypeSmith	Soft-Logik	46	130	88%	C
Outline fonts designer					
Understanding Imagine 2		43	146	92%	B FG
Alternative Image					
Video Studio 3	ZVP	39	158	79%	C
Video production software					
Vista Pro 3	DMI plc	46	146	92%	C FG
Fractal generator					
Voyager	Virtual Reality Labs	43	156	92%	C FG
Astronomy programs					
Wordperfect	Wordperfect Corp	40	158	60%	P
Word processor					
Wordworth 1.1	Digita	39	184	90%	P FG
Word processor					
Wordworth 1.1	Digita	40	153	89%	P
Word processor					
Wordworth 2	Digita	41	184	91%	P FG
Document processor					
Workbench 3	Commodore	41	45		
Amiga Operating system					
X-CAD 2000	Digital Multimedia	40	176	88%	C
Computer aided design package					

AMIGA CD TITLES

Because Compact Discs will inevitably take over as the main, if not the only, format on which you will be able to buy any sort of software, we think it's important to keep up-to-date with what's happening in this market. The following list is of all types of software, from games and education titles to music creators and utilities.

Name	Issue	Page	Score
17 Bit Collection	17 Bit Software	48	157
A Bun for Barney	BBC Multimedia	39	49
Alistair in Outer Space	Altered Images	48	142
All Dogs go to Heaven	39	49	25%
	Merit Software		
American Heritage Illustrated Dictionary	Xiphias	39	42
Applied Optical Media	39	45	85%
Animals in Motion	On-line	39	50
Barney Bear goes to School	39	49	11%
	Free Spirit		
Battlechess	Interplay	39	36
Battlestorm	Titus	39	36
Case of the Cautious Condor	39	38	79%
	Tiger Media		
Casino Games	Saen Software	39	36
CD-PD Collection	39	50	89%
	Almathera Systems		
CD-Remix 2	Microdeal	39	50
Chaos in Andromeda	On-line	39	36
Connoisseur Fine Art Collection	39	42	77%
	Lascelles		
Defender of the Crown	39	38	48%
	Cinemaware		
Discis Books Series	39	48	Varied
Dr Wellman, Health Advisor	Digitia	39	42
			78%



Of our CD reviews, *The Demo Collection* from Almathera Systems scored the only Format Gold.

Falcon	Mirrortsoft	39	38	75%
Fred Fish CD-ROM Collection	Hypermedia Concepts	39	50	89%
Fun School 3 (under 5s)	Europress	39	49	25%
Fun School 3 (5s-7s)	Europress	39	49	70%
Gardenfax Series	Intersearch	39	44	85%
Global Chaos CDTV	Hex	41	147	78%
Guinness Disc of Records	Guinness	39	42	75%
Heroic Age of Spaceflight	Troika	39	42	55%
Hound of the Baskervilles	On-line	39	38	12%
Hutchinson's Encyclopaedia	Attica Cybernetics	39	44	47%
Illustrated Bible	Animated Pixels	39	44	25%
Illustrated Complete Works of Shakespeare	Animated Pixels	39	44	25%
Insight: Technology	CDTV	41	146	87%
Japan World	Global Learning Systems	39	44	89%
Karaoke Hits 1	Music Machine	41	146	75%
Learn French with Asterix 1 & 2	Eurotalk/Microdeal	39	48	84%
Lemmings	Psygnosis	39	36	75%
Mind Run	Crealude	39	38	32%
Music Maker	Music Sales	39	50	35%
Mypaint	Saddleback Graphics	39	49	35%
New Basics Electronic Cookbook	Xiphias	39	45	75%
New Grolier Encyclopaedia	Electronic Publishing	39	45	84%
Psycho Killer	On-line	39	38	13%
Sim City	Infogrames	39	41	75%
Snoopy: The Missing Blanket	The Edge	39	41	36%
Team Yankee	Empire	39	41	65%
The Demo Collection				

SOFTWARE

38-40 QUEENS CHAMBERS, QUEEN ST,



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MONITORS

CBM 1960 MULTISYNC 329

CBM 1084/5 189

PHILIPS CM8833 inc F19 SOFTWARE 189

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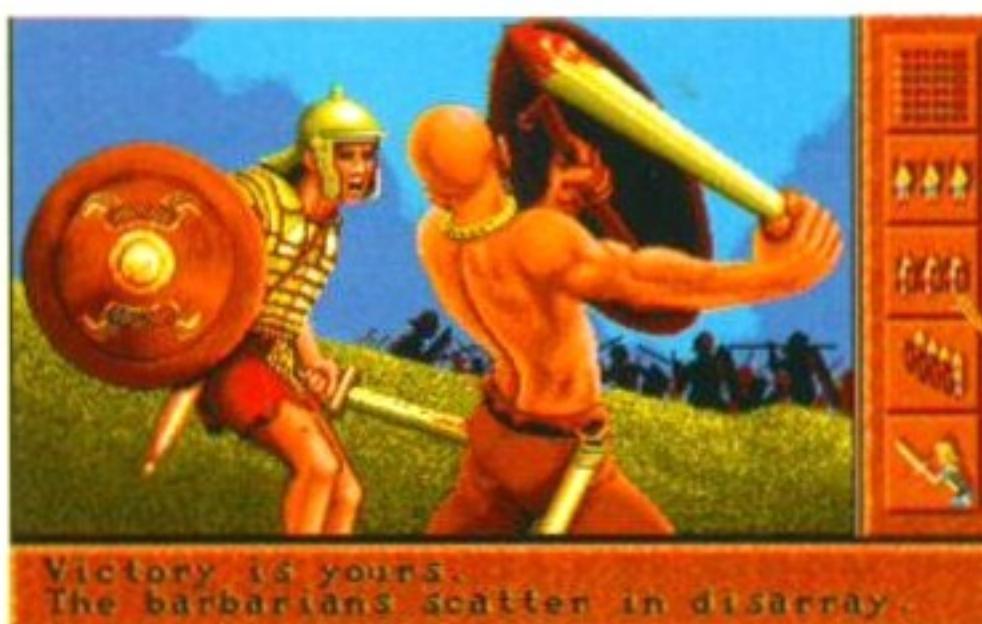


Taking its title from the year the Suez Canal was opened, 1869 was rated as one of the best multiplayer games.

BEFORE YOU BUY a game you want to know if it's worth the money, don't you? And who do you trust to tell you - *Amiga Format*, of course! And on these two pages you can check any one of the 290 games we've looked at over the past 12 months.

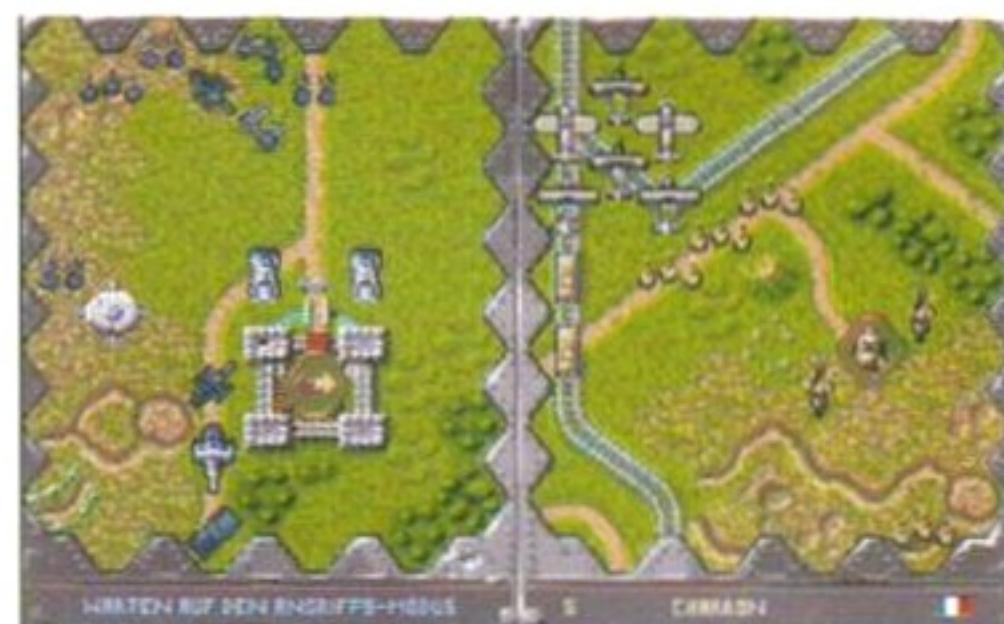
If there's a B at the end of the column this means it's a budget game and an FG means it's a Format Gold (90 per cent and over). But any game which has a score of 80 per cent or more is well worth having, and 70 per cent plus is certainly worth a good look at.

Name	Issue	Page	Score	
1869	46	72	90%	FG
3D Construction Kit 2	42	140	78%	
688 Attack Sub	48	89	73%	B
Abandoned Places 2	45	84	87%	
Adrenalynn	44	108	63%	B
Air Bucks	38	81	72%	
Air Support	41	137	62%	
Alien 3	45	72	70%	
Alien Breed Special Edition	43	111	87%	B
Amberstar	42	128	81%	
Ancient Art of War in the Skies	48	78	87%	
Aquatic Games	40	94	86%	
Arnie	37	108	44%	B
A-Train	45	68	84%	
Aquaventura	37	98	73%	
Arabian Nights	46	64	80%	
Archer MacLean's Pool	40	100	89%	
Ashes of Empire	37	78	85%	
Assassin	42	124	85%	
AV88 Harrier Assault	43	65	60%	
B17 Flying Fortress	46	76	91%	FG
Bard's Tale Construction Set	45	65	66%	
BAT II	40	78	84%	
Battle Isle '93	48	64	81%	
Battle Isle Scenario Vol 1	37	61	72%	
Battle Squadron	47	93	86%	B
BC Kid	42	136	70%	
Beavers	47	87	75%	
Bignose the Caveman	43	108	65%	B
Bill's Tomato Game	43	76	88%	
Body Blows	46	58	87%	
Boston Bomb Club	48	90	77%	B
BSS Jane Seymour	38	97	75%	B
Bubble Dizzy	44	110	78%	B
Budokan - The Martial Spirit	48	88	80%	B
Bug Bomber	39	110	83%	
Bunny Bricks	41	97	78%	
Caesar	41	92	91%	FG
California Games 2	38	76	64%	
Campaign	41	124	79%	
Captain Dynamo	40	111	67%	B
Carl Lewis Challenge	40	104	56%	
Carnage	45	96	51%	B
Carrier Command	41	88	90%	B, FG
Champ Manager	37	61	41%	
Champ Manager '93	48	73	82%	
Chuck Rock 2	46	80	81%	
Civilization	38	51	94%	FG
CJ in the USA	40	110	79%	B
Cohort II	47	58	55%	
Conflict: Korea	37	86	70%	
Cool Croc Twins	37	74	88%	
Cool World	42	120	62%	
Crack Down	37	108	54%	B
Crazy Cars III	38	64	93%	FG
Crazy Seasons	38	78	68%	
Creatures	45	64	63%	
Crystal Kingdom Dizzy	45	83	65%	
Crystals of Arborea	46	94	52%	B



"A fun wargame and a beautiful sim" we said of Caesar and gave it a stunning score of 91 per cent...

Curse of Enchantia	41	136	62%	
Cytron	42	133	70%	
Dalek Attack	43	69	59%	
Dark Queen of Krynn	41	111	49%	
Darkseed	44	68	72%	
Desert Strike	46	68	87%	
D-Generation	37	101	66%	
Discovery	37	95	72%	
Dizzy - Prince of the Yolk Folk	41	88	81%	B
Dojo Dan	37	79	80%	
Doodlebug	41	133	72%	
Dragon's Lair III	44	98	57%	
Dreadnoughts	37	86	45%	
Dylan Dog - the Murderers	37	78	42%	
Edd the Duck 2	47	93	80%	B
Emlyn Hughes Soccer	38	96	77%	B
Epic	37	71	34%	
Erik	39	115	67%	B
Espana The Games '92	39	104	43%	
European Champions	38	65	34%	
Euro Soccer	44	87	45%	
Exodus 3010	44	65	62%	
F-19 Stealth Fighter	48	88	86%	B
F1 Tornado	40	110	47%	B
Falcon	39	115	90%	B, FG
Falcon - Counterstrike	39	115	80%	B
Falcon - Firefight	39	115	78%	B
Fascination	39	90	65%	
Fatal Strokes	44	81	17%	
Fighter Duel Pro	41	137	27%	
Final Command	37	109	53%	B
Final Countdown	47	92	70%	B
Final Flight	48	87	57%	B
Fire Force	42	123	71%	



...but HistoryLine 1914-1918 from Blue Byte topped that with 94 per cent and we proclaimed: "It's a winner!"

Firehawk	48	66	65%	
First Class	44	110	88%	B
Flashback	45	54	93%	FG
Flight of the Intruder	42	150	82%	B
Flimbo's Quest	42	151	65%	B
Floor 13	37	104	50%	
Football Champ	37	78	40%	
Fourth and Inches	47	91	42%	B
Future Wars	42	150	57%	B
Gem'X	44	109	84%	B
G-LOC R360	38	92	44%	
Gobliins	38	60	81%	
Gobliins 2	42	141	82%	
Graham Gooch Cricket	47	58	78%	
Graham Taylor's Soccer	37	75	82%	
Guy Spy	38	92	48%	
Hero Quest	45	97	86%	B
HistoryLine 1914-1918	43	104	94%	FG
Hoi	38	92	72%	
Hook	38	57	48%	
Horror Zombies from the Crypt	37	109	48%	B
Hostile Breed	37	94	78%	
Hudson Hawk	45	98	62%	B
Human Race - Jurassic Levels	47	64	72%	
Indiana Jones & the Fate of Atlantis	43	72	92%	FG
International 3D Tennis	38	96	83%	B
International Rugby Challenge	47	64	16%	
International Soccer Challenge	48	87	57%	B
International Sports Challenge	37	64	68%	
International Tennis	45	97	82%	B
International Truck Racing	45	96	41%	B
Ishar A1200 version	48	65	77%	
Ishar - Legend of the Fortress	37	86	76%	

Games of the year

In 12 months we've reviewed 290 games - and that's not including all the round-ups, compilations and ones on CD! Here's the lot of 'em.

GAMES ROUND-UPS

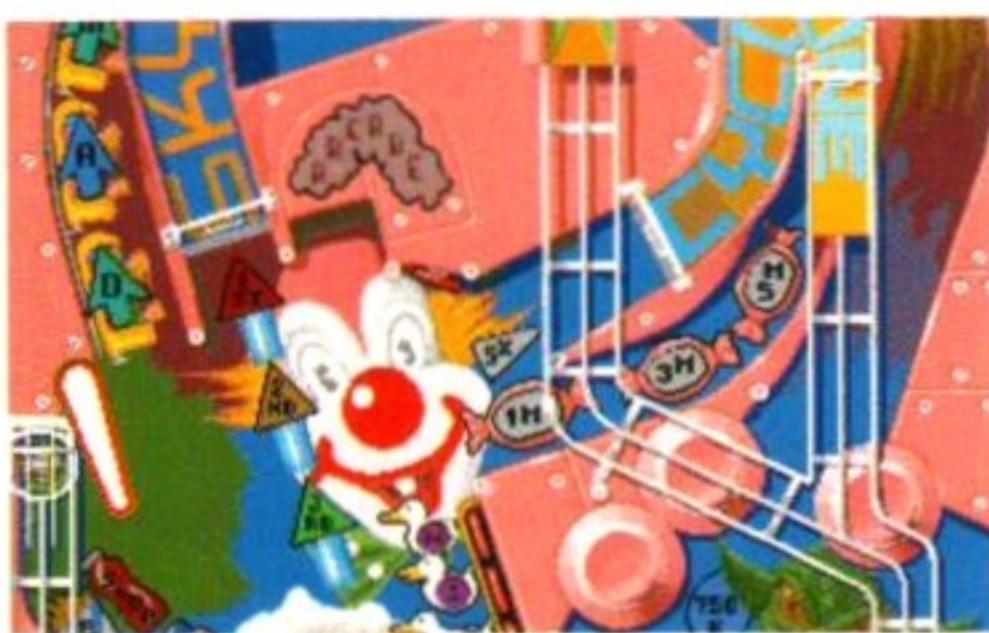
We review and rate games of the same genre against each other to judge which are the best of the bunch.

Name	Issue	Page	
Driving games	37	48	
The top Amiga car racing games			
Platform games	37	57	
Just what is a platform game?			
Films as games	38	54	
What's in a name?			
CD titles	39	35	
Amiga CD at a glance			
Multi-player games	40	66	
How to hook up and play			
Budget Classics	41	83	
The world of the cheap and fun			
The best games ever	42	164	
(and how to play them)			
Bumper Gamebuster special			



Zool wasn't released in time for our round-up of what makes a good platform game, but it's the perfect example.

A1200 games round-up	47	84
Classics on the new machine		
On-line games	45	48
Round-up of games you can play via modem		

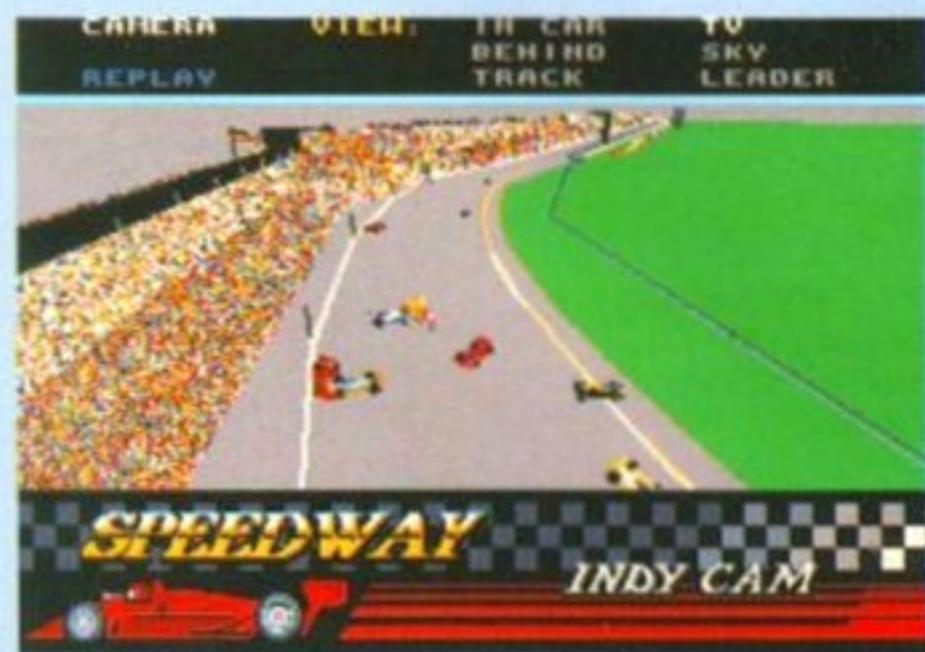


Pinball Fantasies got AF addicted to pinball, and even more man hours were lost to it than with *Sensible Soccer!*

Italy 1990	37	108	70%	
Jaguar XJ220	37	51	83%	
Jahangir Khan Squash	41	88	64%	B
Jim Power in Mutant Planet	37	65	85%	
Joe and Mac: Caveman Ninja	43	89	74%	
John Barnes European Football	37	84	42%	
KGB	42	132	91%	FG
Knightmare	46	92	85%	B
Krusty's Super Fun House	43	88	85%	
Kwik Snax	39	114	80%	B
Leeds United Champions!	42	148	32%	B
Legend	46	92	88%	B
Legend of Kyrandia	42	108	87%	
Legend of Valour	44	90	91%	FG
Lemmings 2 - The Tribes	46	54	94%	FG
Lethal Weapon	43	68	64%	
Links Bountiful	38	85	88%	
Links Firestone	38	85	89%	
Lionheart	45	88	87%	
Liverpool	39	95	45%	
Locomotion	42	133	19%	
Lost Dutch Mine	47	93	74%	B
Lotus Turbo Challenge III	40	72	76%	
M1 Tank Platoon	48	88	75%	B
Match Of The Day	40	107	56%	
McDonaldland	41	133	44%	
MegaTraveller 2	38	69	82%	
MegaFortress	38	74	77%	
Metal Mutant	46	94	44%	B
Mille Miglia	37	64	51%	
Moonstone	46	92	72%	B
Morph	48	68	81%	
Motörhead	42	137	76%	
Myth	37	65	58%	
Narco Police	39	115	63%	B
Neighbours	37	64	24%	
Nick Faldo's Championship Golf	43	90	90%	FG
Nicky Boom	42	117	88%	
Nigel Mansell's World Champ	42	102	55%	
Nigel Mansell's WC A1200	47	84	55%	
Nippon Safes Inc	47	78	80%	
No Greater Glory	42	117	50%	
No Second Prize	41	120	80%	
North and South	37	109	84%	B
Oh No! More Lemmings	42	148	80%	B
Omar Sharif's Bridge	38	93	58%	
Operation Combat	39	114	79%	B
Operation Stealth	42	150	66%	B
Paladin II	41	140	69%	
Panzer Battles	37	95	69%	
Paperboy 2	39	94	44%	
Pictionary	47	92	45%	B
Pinball Fantasies	41	128	90%	FG
Pipemania	44	108	83%	B
Piracy	43	65	50%	
Pirates	48	90	70%	B
Plan 9 From Outer Space	39	78	45%	
Popeye 2	39	115	68%	B
Populous Promised Lands	47	91	89%	B
Populous II: Challenge Games	41	97	80%	
PP Hammer	44	108	72%	B
Premiere	39	88	89%	
Premier Manager	43	58	87%	
Prince of Persia	45	98	74%	B
Push-Over	38	84	86%	
Putty	40	82	95%	FG
Ragnarok	45	61	60%	
Rampart	41	104	75%	
RBI 2 Baseball	45	98	82%	B
Reach for the Skies	48	82	90%	FG
Red Zone	40	108	64%	
Rick Dangerous 2	48	89	86%	B
Road Rash	41	116	84%	

COMPILATIONS - MORE GAMES FOR YOUR MONEY

Most compilations we've looked at offer more games for your money, and budget prices. But as we all know - it's quality, not quantity that counts, so take a look at this list of compilation games that we've put to the test this year to find out which ones are really worth looking out for...



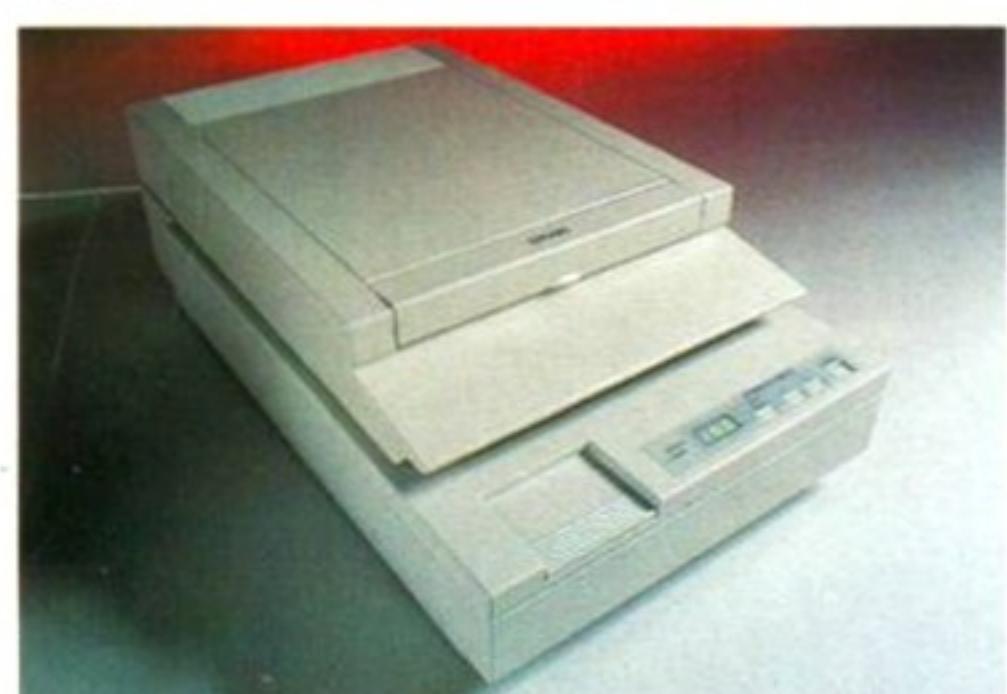
Indy 500 speeds its way to the top as part of the SportsMasters package which scored a massive 90%.

Name	Issue	Page	Score
Action Sport	45	97	70% B
Killerball, Superski 2, Grand Prix 500, Advantage Tennis			
Cartoon Collection	37	109	84%
Spike in Transylvania, CJ's Elephant Antics, Treasure Island Dizzy, Seymour Goes to Hollywood, Slightly Magic			
Combat Classics	42	150	88% B
F-15 Strike Eagle, Team Yankee, 688 Attack Sub			
Fantastic Worlds	43	110	82% B
Populous, Mega-lo-Mania, Pirates, Realms and Wonderland			
Mega Mix	44	110	70% B
Ork, Leander, Agony			
Quattro Power Machines	46	95	68% B
Violator, Grand Prix, Pro Powerboat, Nitro Boost Challenge			
Raving Mad	43	111	89% B
Rodland, James Pond - Robocod, Mega Twins and a free Kixx game			
SportsMasters	44	111	90% B
PGA Tour, Indy 500, Advantage Tennis, European Championship 1992			
Strategy Masters	43	110	76% B
Spirit of Excalibur, Battle Master, Hunter, Chessplayer 2150 and Populous			
Super All-Stars	43	108	75%
Steg the Slug, Magicland Dizzy, Captain Dynamo, CJ in the USA, Robin Hood Legend Quest			
Super Fighter	43	109	46% B
Pitfighter, Final Fight and WWF Wrestlemania			
The Dream Team	43	109	70% B
The Simpsons: Bart vs The Space Mutants, Terminator 2, WWF Wrestlemania			
The Grand Slam Collection	42	147	57% B
10 games in one box! The Running Man, Scramble Spirits, Saint and Greaves, The Flintstones, Espionage, Terry's Big Adventure, Trivia, Peter Beardsley's Football, England Football, Terramex			
The Greatest	46	93	91% B
Dune, Lure of the Temptress, Jimmy White's Snooker			
Tri Star Simulations	40	111	43% B
Turbo Trax, Airball, Major Motion			

HARDWARE REVIEWS

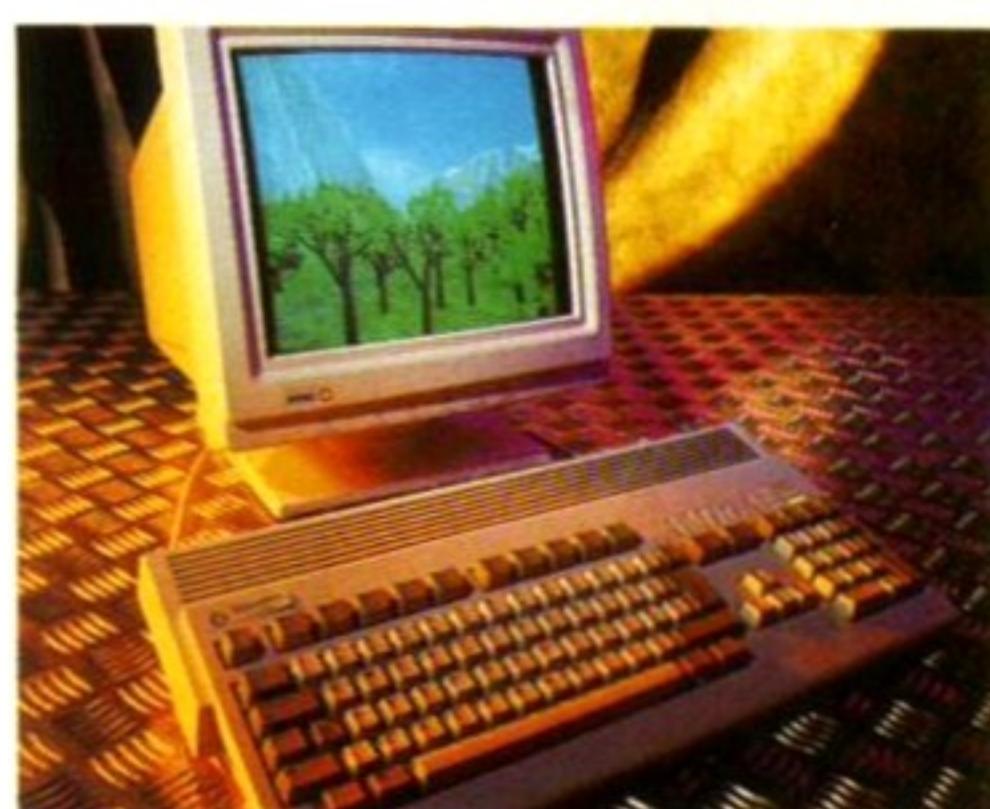
With the A4000/030 and A1200 making their mark this year, we certainly had a lot to write about on the hardware front. But this section is not just about machines, it's also about monitors, printers, hard drives, samplers, accelerators... the list is endless.

Name	issue	Page	Score
A1200 Control Centre	48	139	75%
Control centre			
AD 1012/Studio 16	38	146	73%
Direct to disk recording system			
Alfa Data Optical Mouse	38	159	64%
Mouse			
Alfa Data Scanner	40	164	79%
Mono hand scanner			
AlfaPower HD	45	130	87%
External IDE hard drive			
AMax-II Plus	38	128	91% FG
Mac emulator			
AMINet	37	170	85%
Networking system			
Amstrad SM24000	38	137	77%
Modem			
AVideo 24	38	148	80%
24-bit display board			
Brush Mouse	39	167	65%
Brush mouse			
Canon BJ-10SX	48	138	95% FG
Printer			
Canon BJ-20	39	146	95% FG
Printer			
Canon BJ-200	48	138	95% FG
Printer			
Canon BJ-300	39	146	78%
Printer			
CBM 1084S	38	122	80%
Monitor			
CBM 1085S	38	122	75%
Monitor			
CBM 1960	38	124	72%
Multisync monitor			
CBM 21FST Multisync	38	124	75%
Multisync monitor			
CBM A2386SX bridgeboard	37	148	86%
PC emulator			
CBM A570 CD Interface	39	32	92% FG
CD-ROM drive			
CBM MPS1550C	39	145	48%
Printer			
CDTV 2Mb RAM conversion	38	41	75%
RAM expansion			
CDTV - HD	41	197	45%
CDTV hard drive			
Citizen 224	39	144	78%
Printer			
Citizen 240C	39	145	90% FG
Printer			
Citizen Notebook	39	143	82%
Printer			
Citizen ProJet	39	147	85%
Printer			
Citizen Swift 24x	39	143	60%
Printer			
Citizen Swift 9/9x	39	142	84%
Printer			
Dataflex Design Pocket Biscom	38	136	63%
Modem			



Awarded 97 per cent, Epson's GT-65000 scanner is the highest scoring hardware ever in the history of AF.

Datel Action Replay III	38	152	90% FG
Utility cartridge			
Datel Real Time	40	192	66%
Digitiser			
Datel Realtime Colour Digitiser	38	144	66%
Video grabber			
Datel Video Digi 2	40	191	90% FG
Digitiser			
DCTV	40	191	85%
Digitiser			
Dream GMX-1	44	142	86%
G-MIDI Sound Module			
Dutch Kolff Computer Systems board	37	148	80%
PC emulator			
Emplant	48	120	85%
Colour Macintosh emulator			
Epson EPL-4000	39	147	80%
Printer			
Epson GT-65000	44	154	97% FG
Scanner			
Epson LO570	39	144	80%
Printer			
Epson LX400	39	142	50%
Printer			
External CDTV	44	51	83%
Fujitsu DL1100	39	146	76%
Printer			
Geni Trac Trackball	38	160	82%
Mouse			
Genius Happy Mouse	38	158	82%
Golden Image Mouse	38	158	90% FG
GVP A1230 Turbo Plus	45	128	86%
Accelerator			
GVP A530 Hard Drive/accelerator	38	36	94% FG
GVP G-Lock	47	119	93% FG
Genlock/Video Switcher			
GVP Impact Vision 24 v2	48	116	87%
Graphics and video system			
GVP PC286	37	148	78%
PC emulator			
Hyundai HMD2401	38	136	74%
Modem			
ICD AddHard	44	50	30%
Accelerator			
ICD Adspeed/ADIDE	38	37	78%
Hard drive			
ICD Flicker Free Video 2	38	37	84%
Flicker fixer			
JCL ColourPic Plus	40	188	91% FG
Digitiser			
Jin Mouse	38	158	30%
Logic 3 FreeWheel Analogue	44	105	69%
Joystick			
Logic 3 FreeWheel Digital	44	105	52%
Joystick			
Logitech Kidz Mouse	38	158	77%
Mouse			
Marconi Mouse RB2 Trackball	38	160	48%
Mega Mouse	38	159	90% FG
MicroBotics MBX1200	45	128	79%
Accelerator			
Microdeal Clarity 16	44	149	41%
Stereo sampler			
Microdeal VideoMaster	43	136	85%
Video digitiser and sampler			
Naksha Mouse	38	159	89%
NEC MultiSync 4FG	38	125	93% FG
Mouse			
NewTek DigiView Gold	40	188	90% FG
Digitiser			
Oki OL400	43	148	90% FG
LED printer			
OpalVision	41	178	96% FG
True colour 24-bit art package			
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Modem			
Pace Ultralink Quad	38	136	66%
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Panasonic KXP1170	39	142	80%
Printer			
Philips 7CM3209	38	124	76%
Multisync monitor			
Philips Book TV	38	120	85%
Monitor			
Philips CM8833 Mk2	38	123	92% FG
Monitor			



The low-cost, but high performance Vanilla multisync monitor was given the thumbs up in issue 47.

Philips Cube	38	120	90% FG
Monitor			
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Power HD Drive	48	123	93% FG
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Scanner			
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Hard drive			
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Graphics board			
Rockey	42	210	90% FG
Chroma-key system			
Roctec	38	159	74%
Mouse			
Seikosha SP2400	39	143	89%
Printer			
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Digitiser			
Squik Mouse	38	159	80%
Mouse			
SSL B5000 25MHz 68030 Plus 68882	38	38	80%
Accelerator			
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Star Laserprinter4	39	147	78%
Printer			
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Printer			
Supra 9600	38	137	90% FG
Modem			
Supra Faxmodem V32BIS	38	138	93% FG
Modem			
TKB Mouse	38	160	71%
Mouse			
Vanilla Monitor	47	143	85%
Multisync monitor			
Victory Mouse	38	160	75%
Mouse			
VIDI Complete Colour Solution	40	187	92% FG
Digitiser			
Video Backup System	45		

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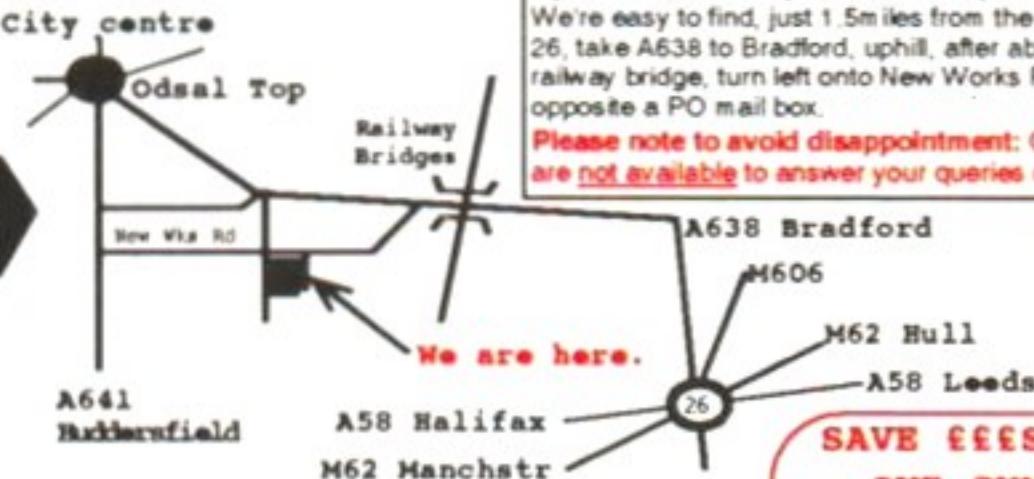
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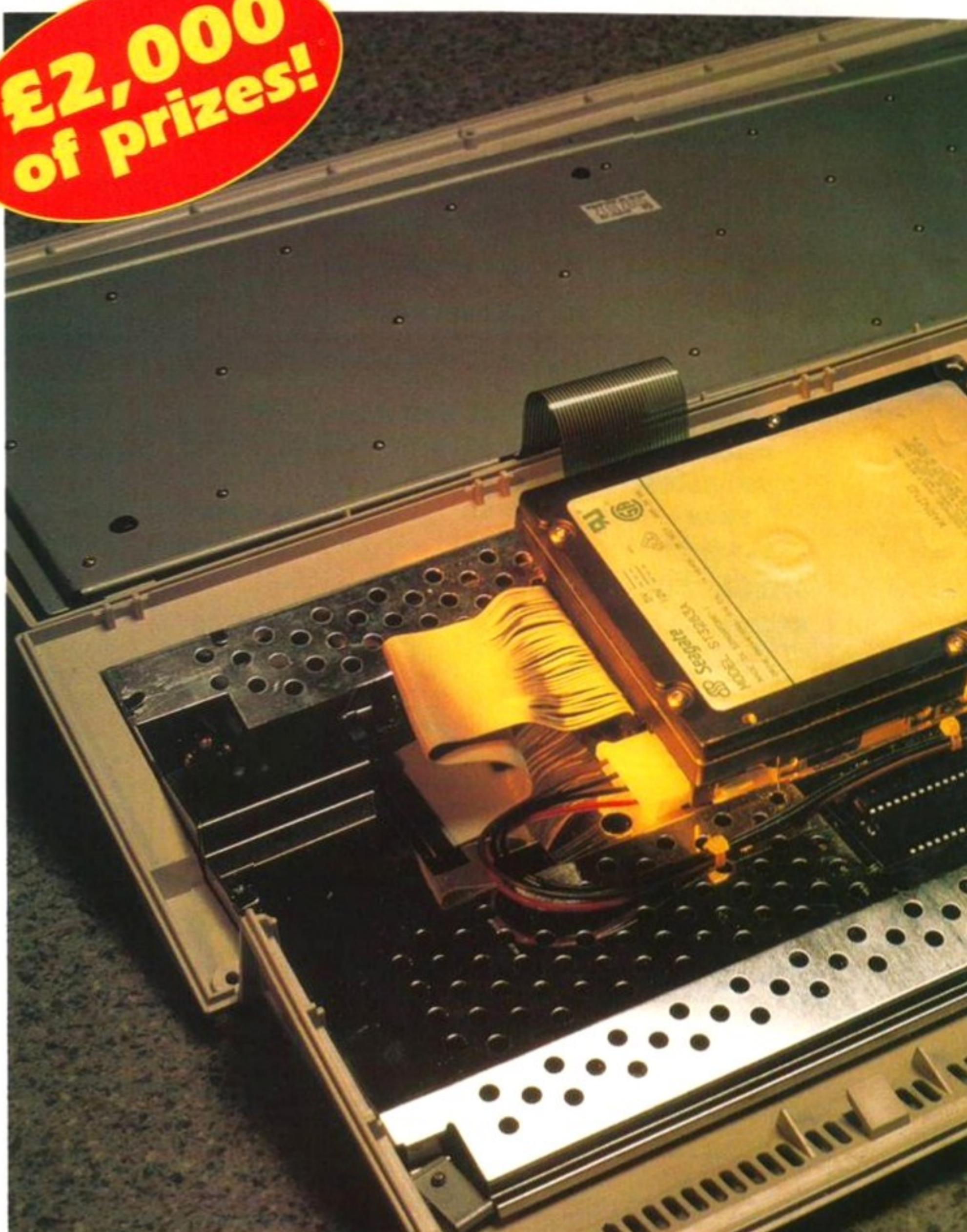
PHILIPS CM8833mk2 COMMODORE

Do you own an A1200?
 Would you like a hard drive for it?
 Would you like that hard drive to
 have a copy of Civilization AGA
 installed on it?

If your answer is yes to all of
 these questions, we've got just
 the competition for you.

Amiga Format, in association with
 Software Demon are giving 20 lucky
 readers a chance to get a 40Mb hard
 drive installed in their machine and
 win a copy of Civilization.

£2,000
 of prizes!



Amiga Format Grand Win one of twenty

The A1200 has been a storming success! The machine's ability to accept an internal IDE hard drive has also gone down well with the public, who welcomed the opportunity to save desk space and money at the same time. Few companies offer IDE drives for less than Software Demon, who devised their own system of getting the larger, and cheaper 3.5-inch drives into the A1200's spacious casing.

Although buying an A1200 internal hard drive can be a bit of a minefield, Software Demon are one of those companies who, in our experience, offer excellent customer service.

On top of good service and good prices, Software Demon have secured another great incentive to buy one of their drives. It's called Civilization, and in issue 38 of this very magazine it scored an incredible 94 per cent. The AGA version of Civilization has just been completed, and Software Demon have acquired the distribution rights. Not only will they be selling the game to any A1200 and A4000 owners who

want a 256 colour version of this highly acclaimed management/strategy game, but they will be giving a free copy to anyone who buys a hard drive from them. And to celebrate this momentous occurrence Software Demon are offering you the chance to become one of the lucky owners of this hardware/software combination.

All you have to do is study the 10 simple questions on the right, answer them (correctly if possible) and send the (correct) answers on a sealed envelope or postcard to the address shown to the right.

Please don't send multiple entries, we have just received 78 from one person for the A4000 competition, which must have cost around £18 in stamps and postcards. It really doesn't increase your chance of winning, so save yourself the money and just send one entry. If you want to increase your chance of winning, send it on a groovy postcard that's bound to attract our attention.

Right! Pens at the ready and good luck.



HOW TO ENTER

Simply write down the answers to all 10 questions below on the back of a postcard or stuck down envelope, along with your name and address, then send it to:

Demon Driver Competition
Amiga Format
29 Monmouth Street
Bath
Avon
BA1 2DL

to reach us before, or on, 30th July 1993. We've changed the rules a bit this time, and we're not accepting multiple entries anymore, because we end up with a box of 10,000 competition entries, and they're all from the same 12 people. If you really want to increase your chances of winning, show some initiative, send us an interesting postcard.

Don't send your entries in a sealed envelope, because if it hasn't got the answers on the outside we just put them in the bin. I mean, come on we're giving you the chance to win something for free, and you want us to open thousands of envelopes... no way!

Don't include your entries with letters or Workbench and GameBusters enquiries, because they go to a different address, so one of the two items will never get where it's meant to.

THE RULES

1. Employees of Future Publishing are not welcome to enter. If they do, they have absolutely no chance of winning.
2. Employees of Software Demon cannot enter either, but they probably don't want to, since they most likely get hard drives for next to nothing anyway.
3. No multiple entries will be accepted.
4. The editor's decision is final.

Quiz for August

IDE disk drives

1 Who wrote *Civilization*?

2 What software house did *Civilization*'s author co-found?

3 What train-based god game did *Civilization*'s author also write?

4 What score did *Civilization* receive when reviewed in *Amiga Format*?

5 In which issue of *Amiga Format* was *Civilization* reviewed?

6 What was the date of Elvis Presley's death?

7 What is Software Demon's phone number?

8 What does IDE stand for?

9 What size IDE drive do most companies fit into the A1200?

10 How many kilobytes make up 40 megabytes?

AMIGA FORMAT SPECIAL

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Whether you're a seasoned Amiga user or a total newcomer to the best home computer in the world, you will always want to get more from your machine.

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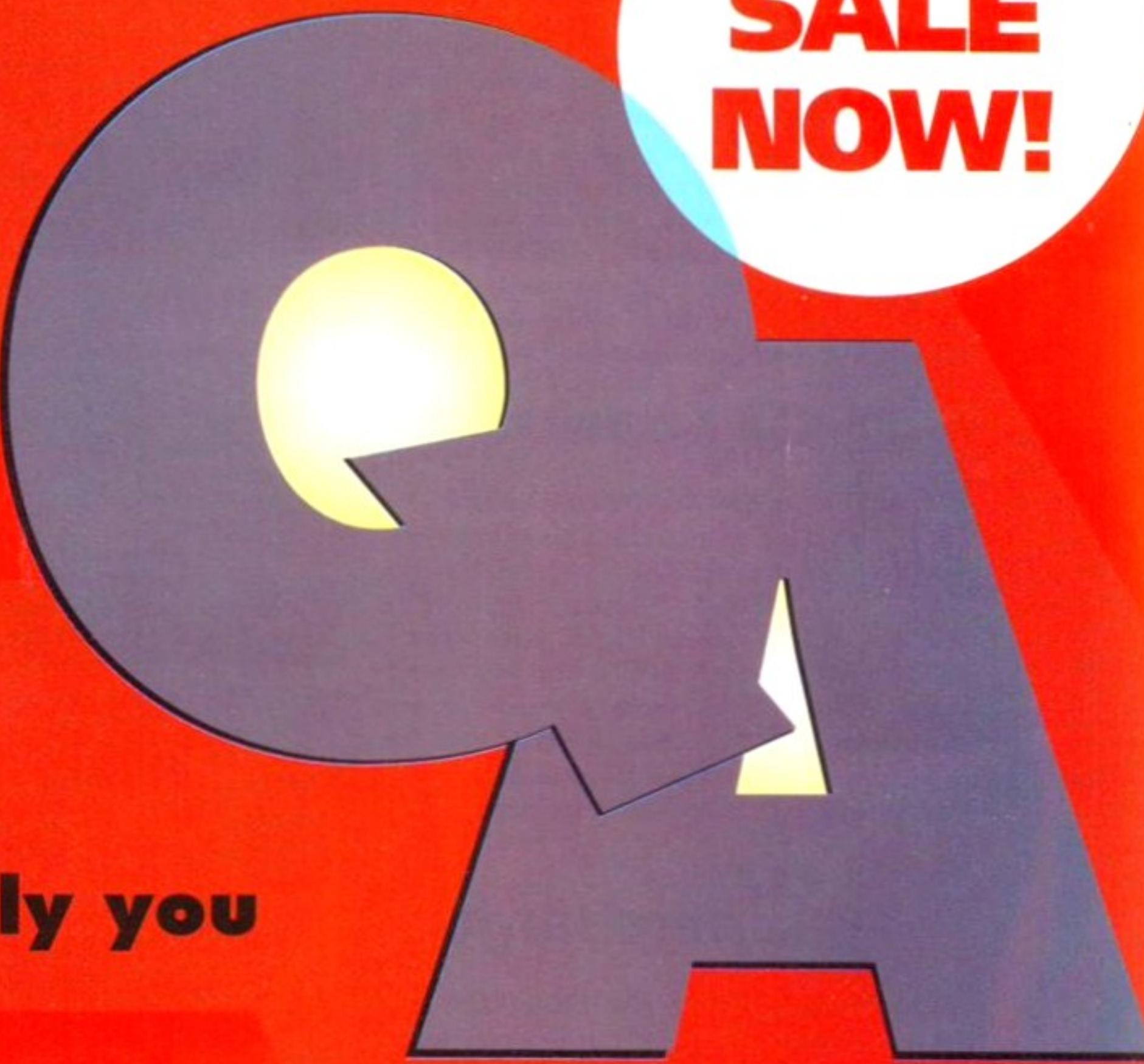
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questions, questions... Will
there ever be CD-ROM for the A600?
What's the difference between 32 and
16-bits? Do I really need an A4000?
How can I upgrade my Kickstart? How much
RAM do I need to play Links? What is the
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**If you have any Amiga-related questions you would like answered, write to the
editor, Amiga Format Specials, 30 Monmouth St, Bath Avon BA1 2BW.
Make sure your letter arrives before Monday April 12th.**

on sale from Thursday May 6th priced at £3.95.

It's not what you do, but the way that you do it... and that's why choosing the right joystick is vital. **Steve Bradley** learns everything his mother never told him about...

The joy of sticks

IT'S A PERSONAL thing, a joystick. And what one you prefer to use really depends on the style of game you're playing and other preferences like the grip, speed and build quality, so you need try a few out before you buy. That's why we've not rated any of the joysticks in this round-up – but we have tested them thoroughly, and if you read what we think of them it will help you to get your hands on a winner!



Konix Speedking

£10.99 ■ Konix 0495 350101

Acclaimed to be 'The World's First High Performance Joystick', the Speedking fits comfortably into your hand. It has a solid feel and a loud shaft click so you can hear each move. A good all-rounder, it feels as if it will last a long time. Also available with turbo-fire (£12.99), Sensible Software used it in their recent soccer World Cup. What more recommendation do you need? There is also an analogue version (£14.99) with free-floating and self-centring modes – useful for flight sims like *Knights of the Sky*. Analogue joysticks will only work with analogue compatible software.



QJ Superstar

£13.99

Spectravideo 081-900 0024

If you could convert a chaise-longue into an Amiga-compatible joystick, it would look like the Superstar. Another of the 'oooh, look at the bits inside' brigade, it has a handle similar to a Kojak lolly. It's a solid affair with five stabilising suction pads and strangely, two fire buttons next to each other. There is a nice click when you move the handle, though it could be heavy for some, and the fire buttons feel flat but you get used to them.

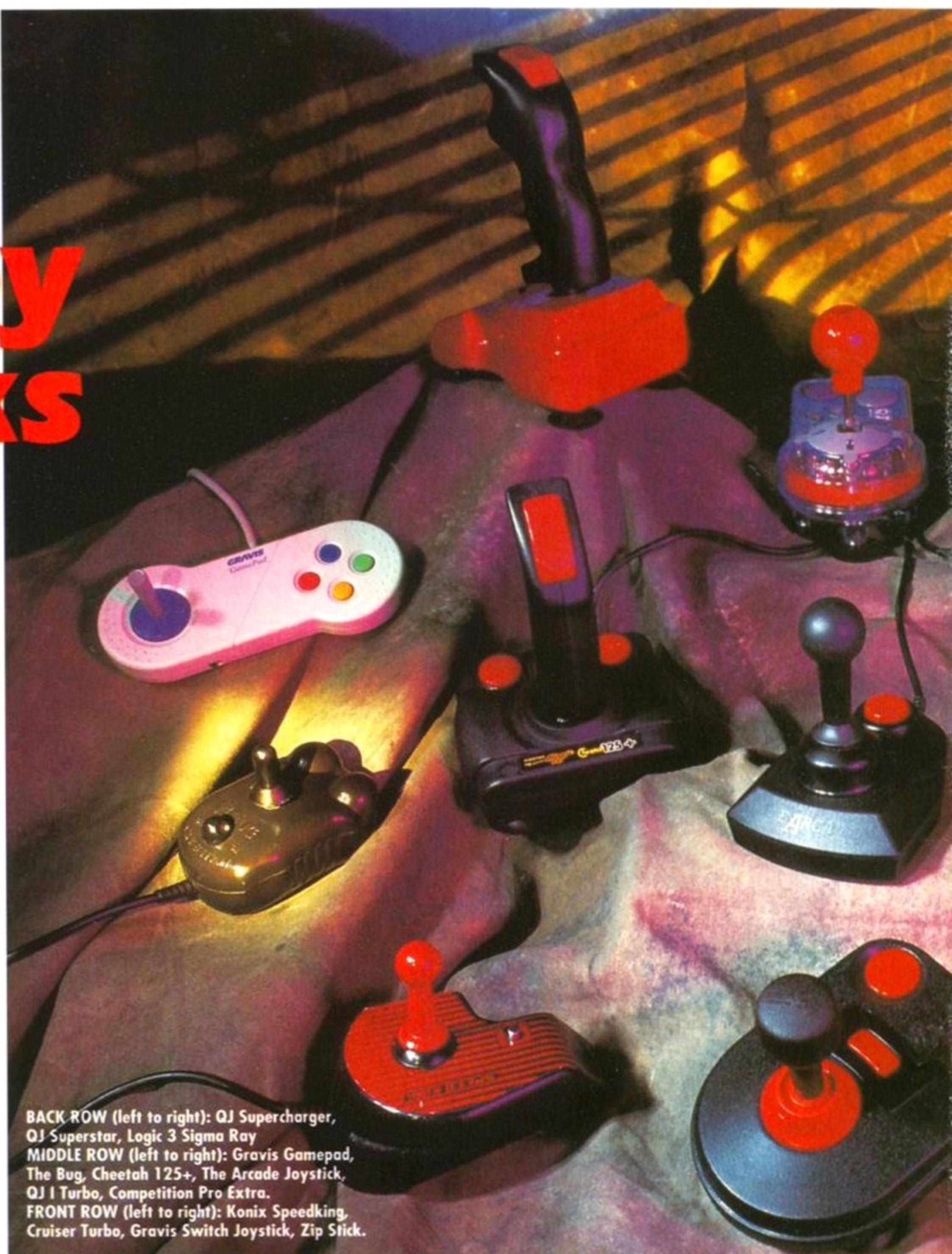


QJ Supercharger

£10.99

Spectravideo 081-900 0024

This one's chunky with a large, black moulded handle and a stocky, pillar-box red base. The handle is comfortable to grip and anyone who has ever played *Crossfire* will appreciate the finger-friendly buttons. This has a very wobbly handle, and one of the few ergonomic types with the wagglability to deliver demon fast bowls in *Gooch's World Class Cricket*. With an autofire option, this will appeal to the games playing all-rounder.



BACK ROW (left to right): QJ Supercharger,

QJ Superstar, Logic 3 Sigma Ray

MIDDLE ROW (left to right): Gravis Gamepad, The Bug, Cheetah 125+, The Arcade Joystick, QJ I Turbo, Competition Pro Extra.

FRONT ROW (left to right): Konix Speedking, Cruiser Turbo, Gravis Switch Joystick, Zip Stick.



QJ I Turbo

£6.99

Spectravideo 081-900 0024

Not as flashy as some of its QJ stablemates, the I Turbo is a simple affair in black plastic. It's light with an 'ergonomically contoured' hand grip which is easy to move, and two fire buttons – one trigger and one on top of the handle. Some may find it too loose, but it's very simple to use.



Competition Pro Extra

£16.99

Power Play 0457 876705

This is quite a famous one: "A joystick's joystick," some claim. Or "Wouldn't touch anything else," is sometimes the cry. So what makes it

so special? Well, for a start, it looks unbreakable with its solid 'frosted' plastic casing and robust steel shaft from the Kojak lollipop school. Nutts has had one since 1985, and it's still unscathed.

The new versions are stiff at first, with not much play in the stick, but this wears in after a few weeks' play. The standard matt black model (£13.99) has a microswitched stick, but only pressure pads under the fire buttons. The Extra model boasts microswitches all round, and an autofire switch to boot. Excellent.



Zip Stick

£14.99

Power Play 0457 876705

Very similar in style to the Competition Pro, the Zip Stick has a lot more play in the stick – so you will find it easier on



your hands at first. The suction pads under the base enable you to fix it to your desk, but take care because you will have a job getting it off again.

The distinctive yellow fire buttons are excellent, and, um, Spangle-shaped (remember Spangles? They were really nice boiled sweets, which died out about 15 years ago). That's about it, except that like the CP it is sturdy, with a steel shaft and a tough plastic casing.



Logic 3 Sigma-ray

£13.99

Spectravideo 081-900 0024

There are five fire buttons on this one. Not that you can use all five at the same time, but hey, we like choice don't we? The comfortable grip handle moves easily (in eight ways) and has a reassuring

click. I liked its overall feel, though someone in the office thought the handle was bit bulky.



The Bug

£14.99

Cheetah 061-707 7080

This one's a cutie. It looks like a bug as well with its large, front fire buttons resembling black eyes. The most palm friendly of all the palm friendlies, The Bug is one that takes some getting used to, but if you take a shine to it you may find you'll never pick up another joystick in earnest. Some may find the short stick too fiddly, but for me it's the most manoeuvrable of the lot. The Bug is a favourite at AF and my two bugs have taken a fair bit of battering over the past few months and are still going strong. Our editor Marcus, however, has destroyed four in just a year!



The Arcade Joystick

£23.99 Euromax 0262 602541

Chillingly, this joystick is shaped like a coffin. And a black coffin to boot. Very simple in design, The Arcade Joystick has one (only one?) firebutton, and not a particularly nice one at that. It's quite a solid little unit but the ball handle is a bit stiff and I found it a little difficult to manoeuvre in fiddly games. And at £24, it's rather expensive for the limited features it offers.



Cheetah 125+

£9.99 Cheetah 061-707 7080

What 125+ stands for is a mystery, perhaps it's to do with high speed inter-city cheetahs. A light, plastic affair with four fire buttons (the buttons on the base have rather flat feel to them), the 125+ is a cheap, user-friendly sort which won't make you gasp in amazement as you clutch its, yes you've guessed it, 'ergonomically designed control handle'. As a fellow gameplayer put it: "I wouldn't sell my Grandmother to get one".



Cruiser Turbo

£13.99

Power Play 0457 876705

No, don't laugh at the name. Oh, alright allow yourself a small chuckle. Cruiser Turbo eh? Sounds like the sort of thing the villains drove in *Miami Vice*. It's not though, it's a joystick and one with variable tension control on the stick. This one's got a rather nice turbo fire button which splays bullets all over the show (if the game involves bullets of course). Other than that, there's not a lot else to say except that from one angle, it looks like an alien with a microphone in its mouth.



Switch Joystick

£29.99 ■ Advanced Gravis
(distributed through Phoenix 0532 350652)

If you're looking for a multi-purpose, multi-functional joystick then this may be ideal. Tastefully coloured in black, ruby red and with gold trimming, the Switch Joystick is packed with features. The padded handle has a 10 setting tension adjuster ranging from soft to stiff, making it suitable for both fast platformers and flight sims (as well as many others). There are three fire buttons, each with normal, turbo fire, forward and backward functions. It's quite pricey, but very nice.



GamePad

£14.99

Advanced Gravis

(distributed through Phoenix 0532 350652)

Hurrah! This one doesn't claim to have any kind of ergonomic design. That's because it's a joypad, and it's flat. The GamePad offers two styles of control – flatpad and screw-in joystick handle. Also, there is a switch which enables you to use the unit for either the right or left hand.

There are four brightly coloured fire buttons, two which can be set in up or down mode, or in turbo-fire. Quite a nice set-up, though I'm not convinced about the lifespan of the screw-in plastic stick.



BACK ROW (left to right): Holdfast Joypad, Logic 3 Freewheel, Topstar, Megastar
 FRONT ROW (left to right): Konix Navigator, QJ Footpedal

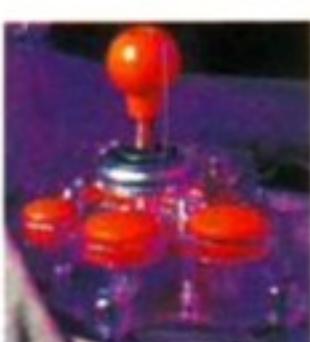


QJ Topstar

£24.99

Spectravideo 081-900 0024

Well here's a handsome beast and no mistake. The Topstar has one of those fancy see-through bases where you can see all it's delightful inner workings. Not only that, it has a shock absorbing suspension system as well which sort of moves slightly as you waggle. One interesting option is the player's slow motion switch which slows you down to 'improve the challenge'. Under no circumstances attempt this when playing *Sensible Soccer*. I found the handle a little too stiff for the more fiddly games, but it is an impressive model all the same.



QJ Megastar

£24.99

Spectravideo 081-900 0024

This must be the Topstar's big brother. It's a bit mystifying to start with, until you realise it has a selection of left or right hand control depending on which way the switch is. What about this lot - five suction pads, four suspension springs and three fire buttons. I found the Megastar rather cumbersome and the handle too stiff for quick manoeuvring. Still, there's not many joysticks which can claim to have 'industrial standard quality micro-switches'.



Konix Navigator

£15.99 ■ Konix 0495 350101

Similar to the Speedking in feel, the Navigator has an 'ergonomically' designed handle which in real terms means it looks like a dodgy toy raygun. The name suggests that it's designed with flight/sub/tank sims in mind, but it can be used for many different types of games, especially as it has an autofire option. If you like a handle you can grasp then this may be for you.



QJ Footpedal

£24.99

Spectravideo 081-900 0024

This bizarre coloured plastic thing is a popular controller for use when playing car racing games. What does it do? Well, it's a set of three footpedals.

The switches in the middle of the unit configure the three footpedals to act like any one of the directions of a standard joystick - up, down, fire and so on. This makes it useable with almost all racing games and flight sims, and it's pretty good, too. Although it looks a bit flimsy, it stands up to a fair amount of beating. The box informs you the Footpedal is: "Excellent for Car Racing, Flight simulation, Tennis, Kung Fu, etc." Tennis? Kung Fu? I'm sorry, but I can't see it. Apart from that, it's a good controller for a reasonable price.



Logic 3 Freewheel

£29.99

Spectravideo 081-900 0024

The trouble with driving games, of course, is that you don't feel like you're actually driving. Whoaa! Here's Nigel Mansell's FreeWheel (calm down, it's £29.99) which really makes you feel like you're driving, sort of. Bit funny this because the wheel isn't attached to any kind of base, it's just there. When you turn it, gravity sensors are tripped and the car/bike moves accordingly. Available in Digital version, which works with racing games that accept an input from a normal joystick, or an Analogue version which works with games like *Formula One Grand Prix* (£39.99).



Holdfast joypad

£24.99 Holdfast 0454 411126

Strange customer this. With its flat, yellow plastic base, four soaring red arrows and fire button, the Holdfast is a rare breed among Amiga compatible joysticks. Not a joystick, but a joypad, the Holdfast was originally aimed at early learners but has found favour with many other users, particularly those with special needs. It's not easy to get used to if you have used more conventional joysticks for any length of time, but it's nice to see Amiga users catered for in this way.

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Pen Pal

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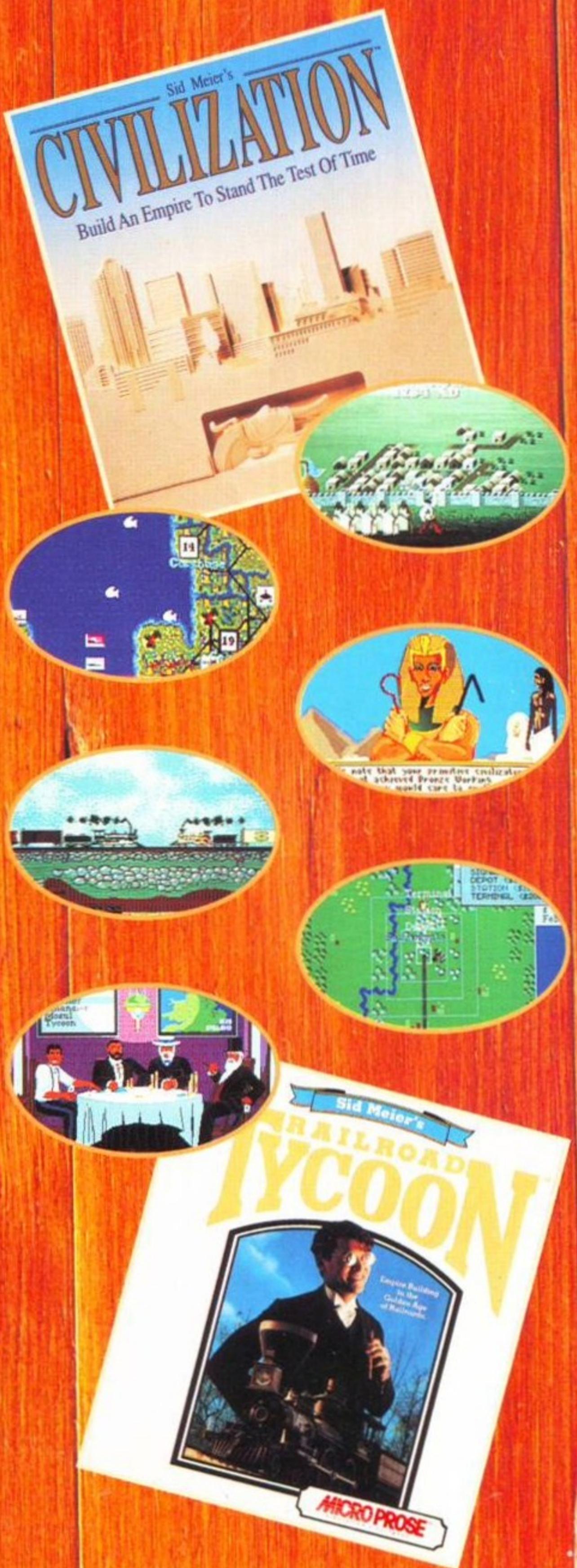
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Screenplay

TRUST US...

Each month, *Amiga Format* brings you the very best in game reviews. We're totally committed to telling you exactly what's wrong or right with each game, and we don't pull any punches.

Once upon a time, we were all punters too, and every one of us has had a nasty experience with a duff game at some time or other.

We don't want that to happen to you, so each game we receive has a whole host of tests to pass before it gets our ultimate accolade - the *Amiga Format* Gold.

We stick to four golden rules:

- (A) If a game isn't finished, then we don't review it.
- (B) If it's poor-quality, then we say so - no matter what the softies think of us.
- (C) We have never, and will never, review a game 'on-site'.
- (D) If we're forced to take sides, it will always be your side we take.

Trust us - and we'll look after you.

THE REVIEWERS

Everyone's got their own favourite type of game, and at AF, we put that to good use. We look at each reviewer's special skills (and predilections) and turn them to your advantage. Here's what our team was up to this month...

STEPHEN BRADLEY

Being a fast, happening guy who's careful with his pennies, Steve's fave game this issue is the budget classic *Lotus Turbo Challenge 2*.

ANDY NUTTALL

Nutts can be found massacring enemies in *Syndicate*, but in his spare time he's usually massacring enemy teams in *Goal!* (Oh yeah? - Ed.)

JAMES LEACH

Because of his curious passion for German motor cars, James cast a critical eye over *War in the VW Golf*. Sorry, that's *War in the Gulf*. Ahem.

PAT MCDONALD

Pat loves the summer - the nights are lighter so he can sleep in the sun. And play *Gunship 2000* late at night to annoy the neighbours.

MARCUS DYSON

AF's warlike editor strapped on his expand-o-suit and consulted Q on his next mission - to review *Robocod A1200*. And all because...

SARAH TANSER

Taking time off from her life of smiles, Sarah was seen uncharacteristically frowning at *Super Cauldron*. But only briefly, of course.

RICHARD BAGULEY

Richard's of a religious bent, so when we asked him to review *Prey* he naturally jumped at the chance. Little did he know...

ANDY HUTCHINSON

Hutch has, since a very early age, wanted to be an airline pilot. Twenty years on, and five minutes with *Airbus* made him realise he couldn't stay awake long enough to take off.

GARY LORD

Due to his strange penchant for horned head-gear, he demanded that we give him *Lost Vikings* to review. He's been charging around the office ever since.

Welcome to another dose of the best reviews around. Summer's here, which means that the number of releases is looking a bit thin, but we have some fantastic games to tempt you. Follow Andy Nuttall into the box of delights...

THE SUN HAS GOT HIS HAT ON...



Syndicate

For a summer holiday this year why not pack up your bags and take a trip into the future with *Syndicate*. Rolling hills, valleys, superb natural wildlife and a group of psychotic cyborgs intent on taking over the world are but a selection of the wonders on offer.

It's the chance of a lifetime, but does your lifetime really stand a chance? See... [Page 83](#)



Lost Vikings

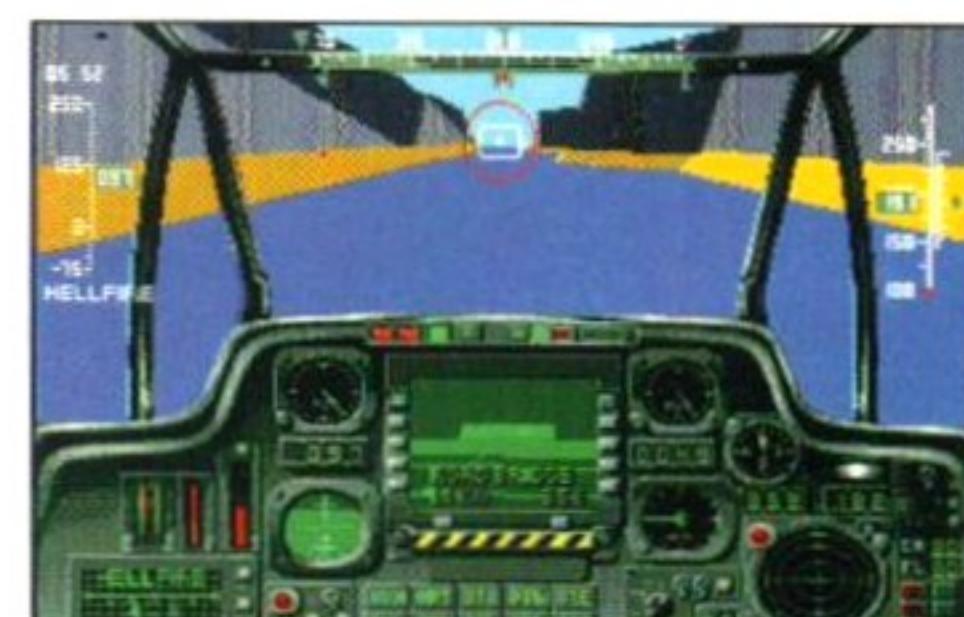
The game which scored a huge hit recently on the console toys has now hit our beloved Amiga. It's about these vikings, you see, and they get, um, extremely lost.

Anyway, it ends up being a kind of *Lemmings-Humans-Troddlers*-type thing, with some horns in it. See what the kiddies have been raving about on... [Page 72](#)

War in the Gulf

After scoring successes with *Team Yankee* and *Pacific Islands*, ODE are back with the third in the series, *War in the Gulf*.

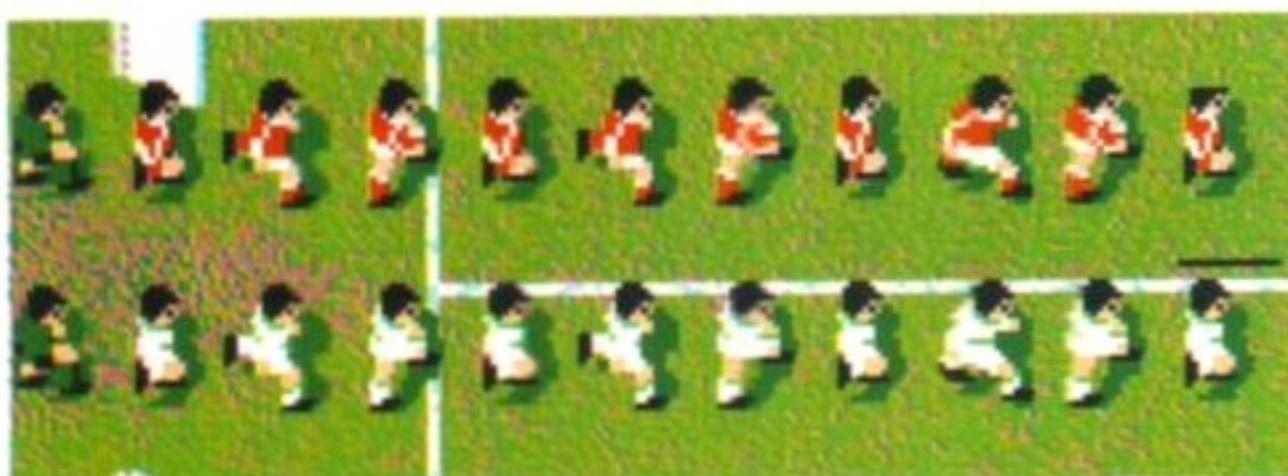
Similar in style to the two previous games, *Gulf* tackles the touchy subject of the Gulf War, which is still on people's minds two years since it finished. Is the time right for a game like this? See our review on... [Page 78](#)



Gunship 2000

To complete our posse of violent, war-related and mind-controlling games in this issue, we bring you a review of MicroProse's new baby, *Gunship 2000*, for your delectation.

Take the controls of a helicopter gunship, fly about a bit and then test your skills on one of the range of missions. Before you fly out into the sunset, turn to... [Page 90](#)



Goal!

Dino Dini's sequel to *Kick Off 2* is here, but is it sensible enough to go to the very top of the Premier League?

Do Amiga owners really need another football game? With over 40 of them out there on the market already, that's a difficult question to answer. Amiga football is, to coin a phrase, a funny old game, because it seems that no matter how many are released, they are all soaked up by a market hungry for new footy titles.

To date, though, there really have only been three software contenders which offer you a decent game of football, and they are: *Kick Off 2*, *Striker* and *Sensible Soccer*. There are at least another four football games planned for release later on this year from various companies, but the one which is on most people's minds at the moment is the subject of this review.

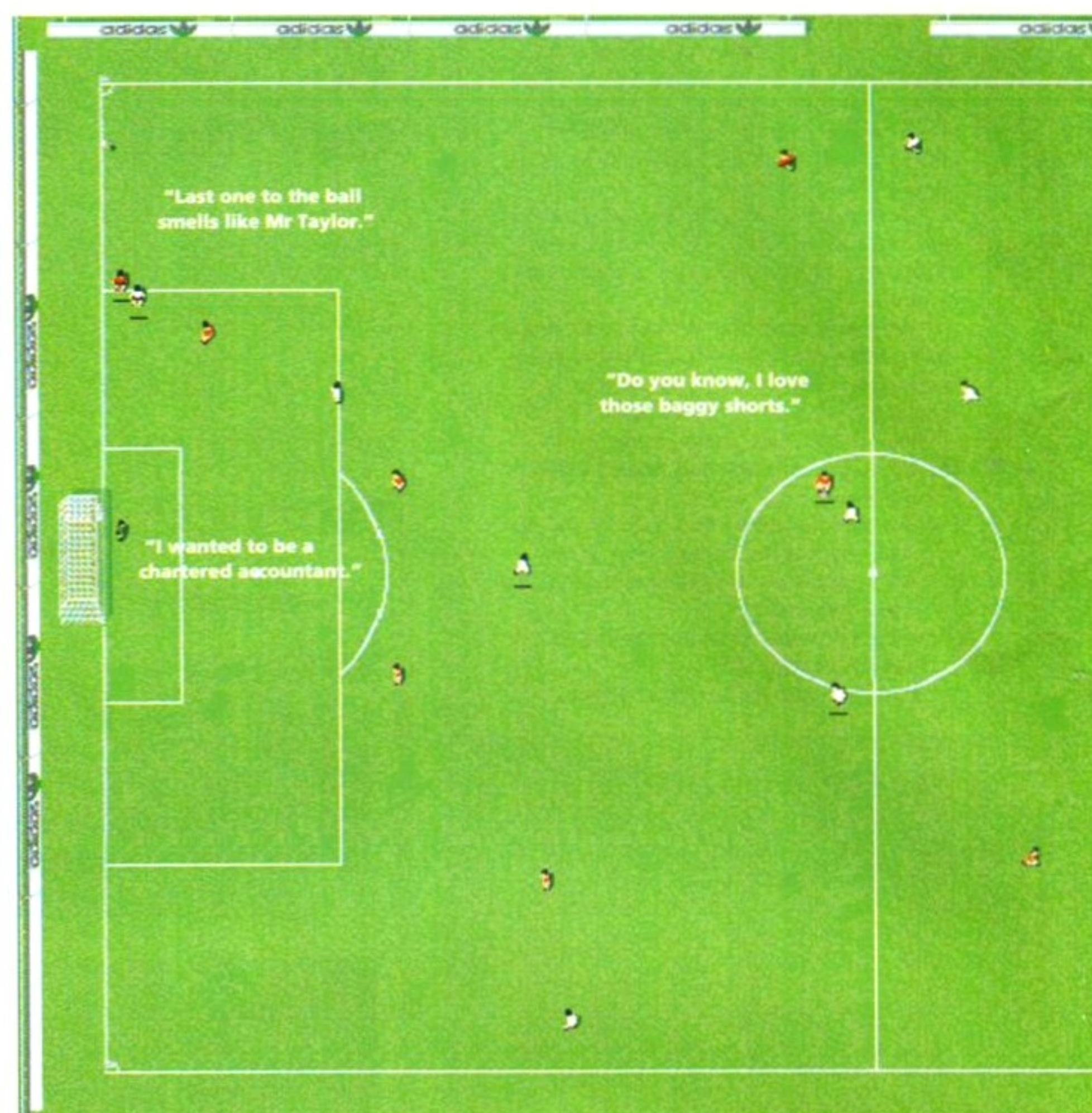
Goal! was programmed by Dino Dini, who is the renowned programmer of *Kick Off 2*, which for two years held the crown as the best football game around – until *Sensible Soccer*, that is. Now, Dino is attempting to reclaim the crown.

Can you kick it?

Like *Kick Off 2*, *Goal!* is viewed from above the pitch, at a slight angle. The players are slightly larger than in the previous game, and the general look of the game is more polished.

Oh this field of dreams, where men become boys and occasionally, boys become men.

GOAL! is available from Virgin Games on 081-960 2255



Two viewing modes are available, which enable you to zoom in or out of the action. In zoom-in mode only a small part of the pitch can be seen at any one time, and the screen scrolls smoothly around to follow the ball.

Because you can't see much of the pitch, a scanner is provided which shows the position of the players and the ball as a series of coloured dots on a mini-pitch.

When the ball goes out of play, the view switches to zoom out mode, so that more of the pitch can be seen and strategies planned more easily. This system works rather well – but if you don't like it the mode can be fixed on either zoom in or out.

In most Amiga football games, the ball will automatically stick to your feet as soon as you touch it, so control is simple but limited. In *Goal!* the ball doesn't stick, but your players have their own momentum, which means they speed up and slow down as you move your joystick. This means that without using the firebutton it is in fact possible to perform some amazing feats of dribbling and control of the ball, just as long as you don't move too quickly.

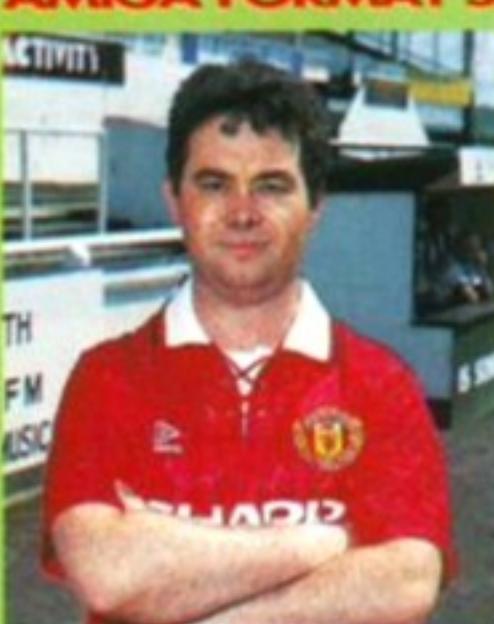
It's a corner

Also, as with *Kick Off 2*, you can actually trap the ball under your feet by simply holding

RUNNING COMMENTARY

Because football games are always so subjective, we asked several computer footy players to comment about *Goal!*.

RICHARD JONES AMIGA FORMAT SPECIAL



Goal! is a game of two halves. Half will send you over the moon and the rest will make you feel sick as the proverbial parrot.

The graphics and player movement are excellent but it is difficult to tackle, the throw ins and corners take an age, and it's tricky to counter a forward's mad rush straight down the middle.

Goal! is a fine game, but it lacks the football 'feel' that *Sensible Soccer* captured.

TIM SMITH AMIGA FORMAT SPECIAL



Ohh God! Graham Taylor; the Premier League; Rovers relegated – football has had a season in hell.

Happily, Amiga football is healthy. But is *Goal!* as good as *Sensible Soccer*? The footy fans' game, *Sensible* is fluid and open. *Goal!* offers big sprites, options

plenty and a table football feel, great for the kids. So... *Goal!* is a great Amiga game, *Sensi'* is the best Amiga football game.

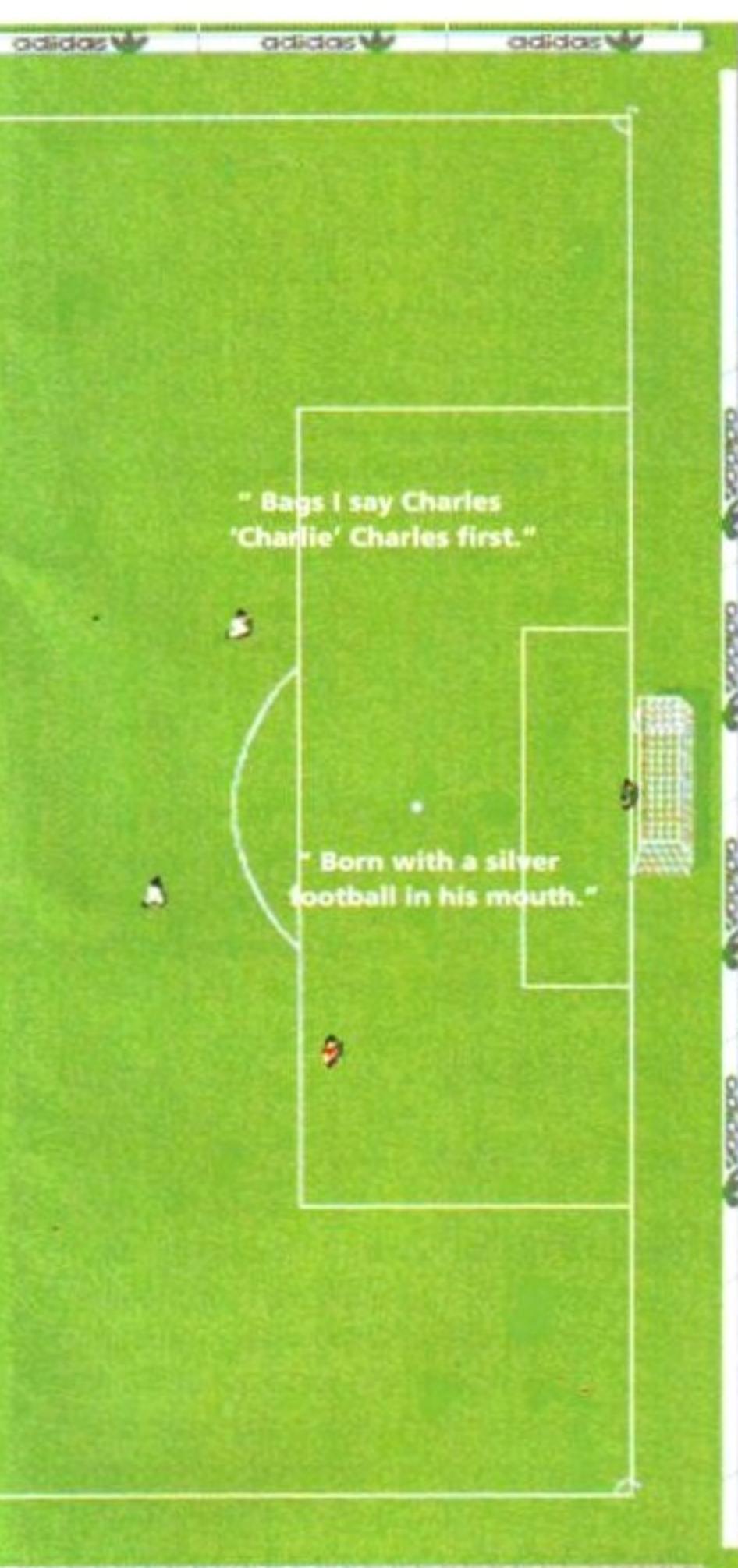
SUE WHITE AMIGA FORMAT



Goal! is a lot like *Sensible Soccer*, which actually I'm not bad at. It isn't as good, though. I found trapping the ball tricky, and once I did get it, it stuck to my foot.

The little men are well animated and run around with great energy. On its easiest level I found it

winnable, if only because your men run much faster than the opposition. Overall, I like *Goal!* but it hasn't replaced *Sensible Soccer* in my affections.



"I must not retaliate, I must not retaliate" thought Ted before breaking the guy's jaw.

The action replay facility has been extended over previous games. It's now in the style of *Striker*, where the function keys are used to control fast forward, rewind and slow motion functions, very much like a video editor. When a goal is scored the replay is shown automatically, as is the trend with recent games. The facility is also available for you to record all of the action replays within a game to disk.

Another important new feature of *Goal!* is the choice between playing horizontally or vertically. This is an unusual option, included to satisfy those people who normally play games such as *Euro Soccer* where the pitch scrolls horizontally.

Playing across the screen instead of down is very disconcerting at first, but the control, speed and movements are all identical in both directions. As well as offering a different challenge, the horizontal pitch removes the fights between who plays up and down the pitch!

Wot no cup competition?

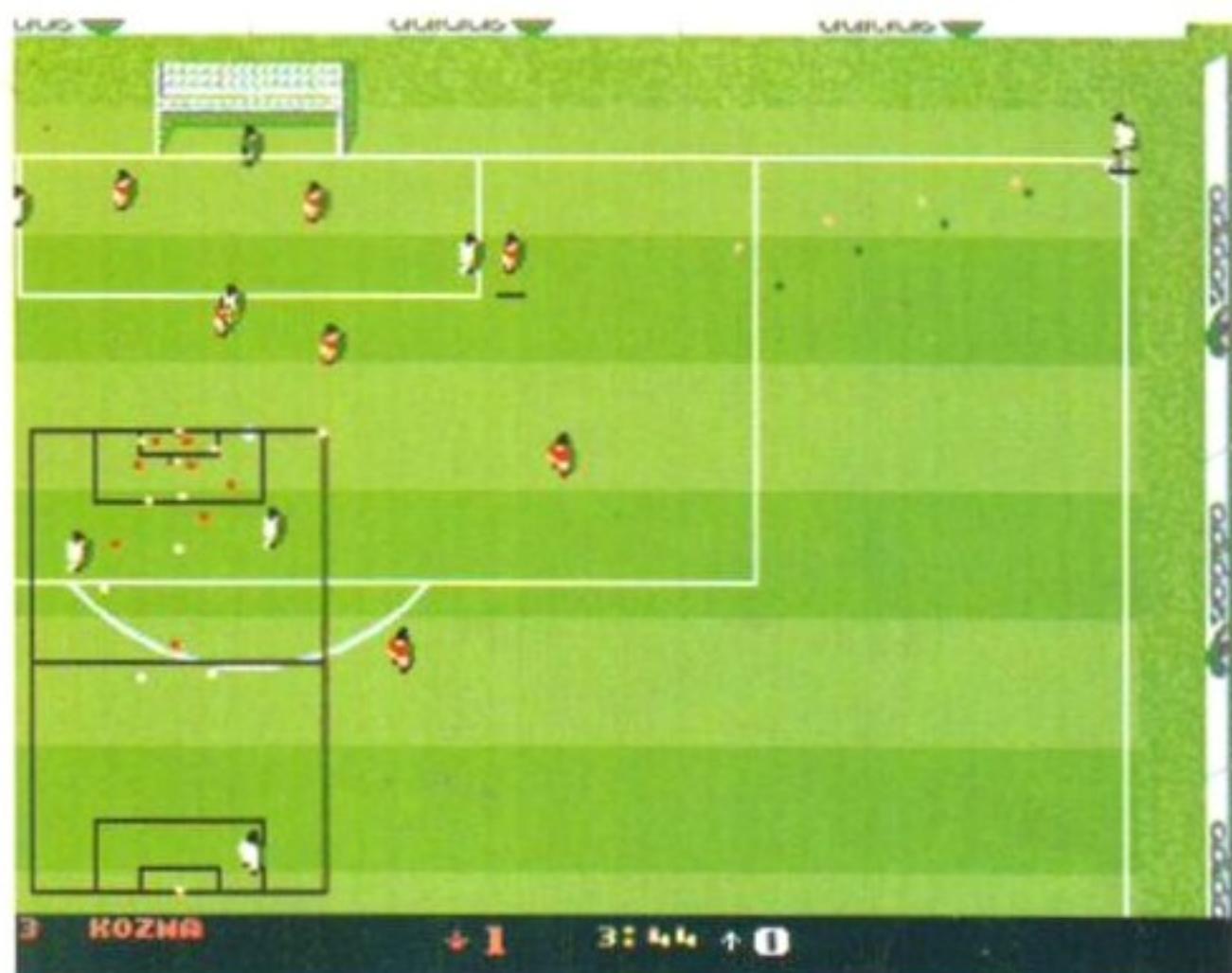
OK, that's basically the new features of *Goal!*. For those of you who haven't played *Kick Off 2*, you would probably like to know that all the usual features are included, such as after touch (so you can bend the ball after you've kicked it), the new back-pass rule, substitutions, formations and league.

The most notable exception, however, is the lack of a cup competition. This, I'm reliably informed, was due to the lack of time, and could be implemented in an update to the

Continued overleaf

down the firebutton. Kicking the ball away is achieved by letting go of the button. Fans of *Kick Off 2* will be pleased to learn that taking corners and free kicks is now a lot easier and more logical than in the previous two games. Before the kick is taken, a dotted line is drawn away from the ball. This is controlled by the joystick, and is used to determine the angle, strength and trajectory of your shot.

Throw-ins also use this method, though, which is a shame because now they tend to break up the flow of the game. In *Kick Off 2* you simply pointed the joystick in the direction you want to throw, and hit fire – a much simpler and quicker method.

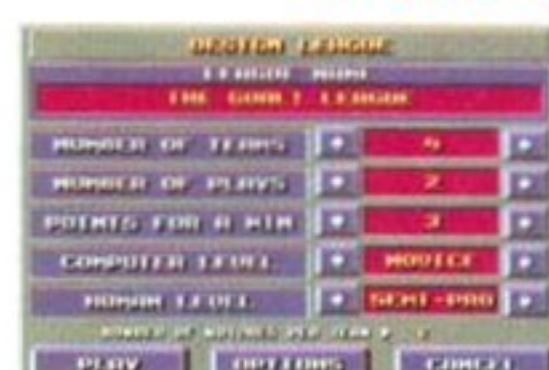


"Look lads, don't be downhearted. These Yanks are the cream of world football, top of the tree, make the Brazilians look like donkeys – honest."



"The Siamese central defensive partnership have once again gone off at a tangent. Surely the manager will have to rethink his selection policy."

LEAGUE COMPETITION



This is similar in style to the *Kick Off 2* league. You can play up to 32 teams, each controlled by a human or the Amiga. You can arrange the teams to play each other up to 10 times, giving a total of 310 matches per team. (The longest match you can play is 40 minutes real-time, so the maximum amount of actual playing time from a single league is 206 hours, or 8.6 days.)

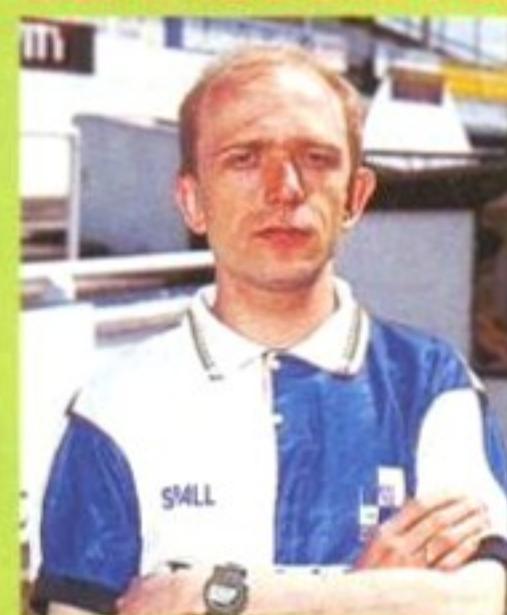
ANDY HUTCHINSON AMIGA FORMAT SPECIAL



Where is it written that sports games have to play exactly like the game they purport to be about? Much is made of the fact that *Sensible Soccer* is more 'like' football than other footie games, yet it's still a collection of tiny sprites wandering around a green pitch.

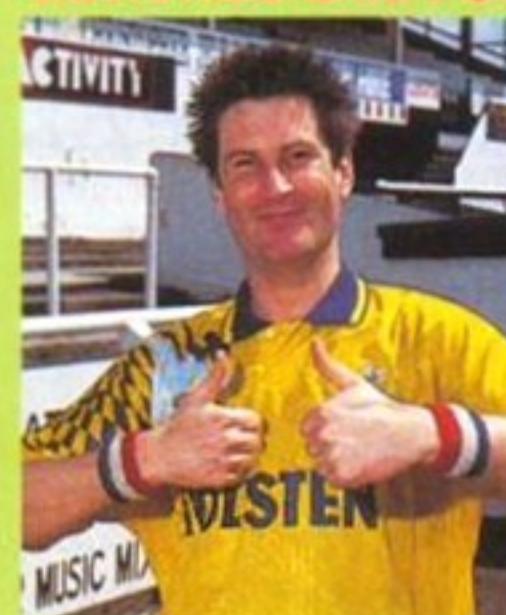
Goal! has a more fluid feel to it than *Sensible*, it's easier to pick up and more fun. I see it this way. *Sensi'* will appeal to those people who care about the colour of away strips, *Goal!* will appeal to those who like competitive two player games.

TRENTON WEBB COMMODORE FORMAT

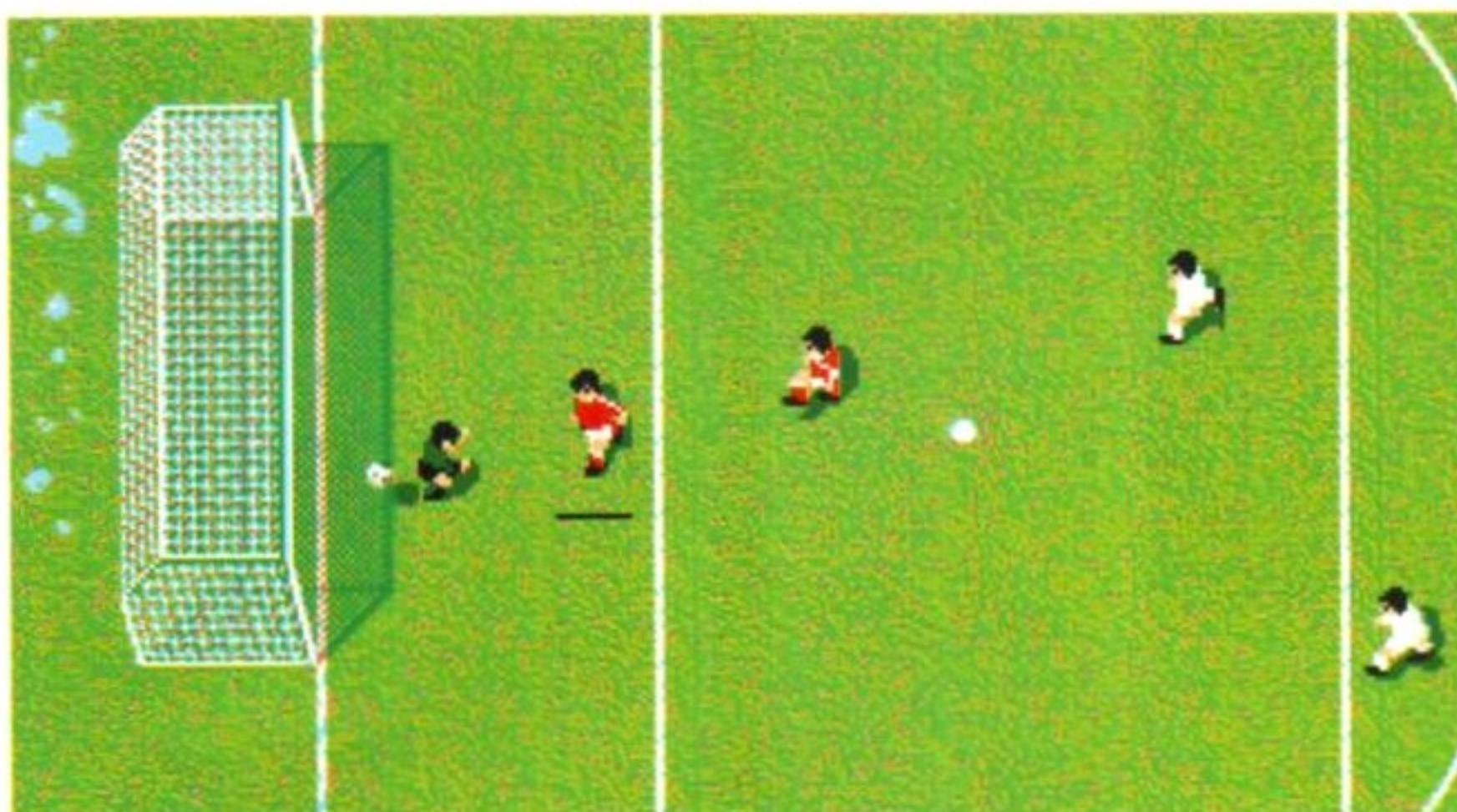


personality, something special to pull you through drubbings by Qatar. *Goal!* lacks this. It's thoroughly competent, but has a little of the Arsenal feel about it. It plays to win, and is a championship contender – but you'd rather be watching Wednesday.

OLIE ALDERTON COMMODORE FORMAT



Slick and pacy with choices of novice to pro play. I stormed into the first game amazed at the effortless way skillful passing, shooting and player control was (unfortunately by my opponent). Aston Villa under my supervision raced around like eleven men with 'weight' and 'drinking' problems. Still, after a few more goes, I got to grips and only lost 4-1 to Nutts. There was so much excitement I needed a lie down and the physio's wet sponge at half time!



"Keep your legs closed young man," said the gaffer. "They'll make you look a fool if they can, nutmeg you at any opportunity." Barry Jeffries never played for Willington under-13s again.



Rodney rose like a salmon, twisted in mid-air and tipped the ball over the bar, I don't think.

game sometime in the future. The sound effects are generally good. The only one which isn't convincing is the crowd noise which occurs as the ball moves towards one end of the pitch – it sounds more like a strong wind than several thousand baying football fans.

Liverpool United

There are a few other points about *Goal!* which could be made better. The most obvious one is the incorrect team colours – for example, Liverpool play in the Manchester United strip – red with white shorts – which is really unforgivable, while Manchester United play in

ARCADE CHALLENGE

The Arcade Challenge mode pits you against a series of five computer teams of increasing skill and speed. As you win each game, your goal difference is multiplied by the number of the stage, and added to your overall score. The first three levels are pretty tame, because the computer opponent is slow and unintelligent, but on level four the computer gets quick and accurate, and you need all your wits and skill to beat it. Then, there's level five...

red with black shorts. The colours can be changed in the game, of course, but a little more care could have been taken in planning the kits.

Next, in some kick-offs one of the opponent's forwards will stand inside the centre circle. This can be particularly annoying, and would certainly not be allowed in real football. OK, so this is only a minor point, but it's worth mentioning.

"Goal! will remain on my playlist for a long time, but for me

Sensible has the edge."

As supplied, the team line-ups are sometimes a little curious. For some reason, depending on your formation – attack, defence, that type of thing – you will probably find that a defender has slipped into an attacking role, and a forward has slipped into midfield or even defence. This is extremely odd, and it means that you usually have to move your formation around before you start each game.

Anyway, the teams may be played around with – players transferred between teams, and teams created, altered and transferred between leagues. All this information can be saved to disk, so if you take time to create your ultimate set-up, you won't have to do it again.

Lastly, there's a niggly problem with selecting which joystick you use. There is nothing in the software to choose between joysticks, so if you have a favourite joystick you have to hope that the Amiga assigns it to you. Otherwise, you need to swap the joysticks between ports – which isn't a fun experience when playing in a league.

Andy Nuttal 

BUT THE REF'S DECISION IS FINAL

ANDY NUTTALL
AMIGA FORMAT

*My impression is that Goal! was written as an arcade game with some football elements, whereas *Sensible Soccer* was written by football fans as a real football simulation. As an arcade game, *Goal!* works really well. It is very playable, even more so than *Kick Off 2*, and the more you play the better your moves become.*

*The flexibility of the game and the scope for controlling the ball are much greater than in *Sensible*, but there is still the overriding feeling that something is lacking. Maybe it's that the throw-ins are too fiddly, or that sometimes the dying seconds of a match tick away while you're waiting for a corner to be set up, or simply that it's too easy to scream unchallenged up the pitch from the kick off and score.*

*Anyway, I'm sure that both *Goal!* and *Sensible Soccer* will both remain on my playlist for a long time. They are both highly playable games, but for me *Sensible* definitely has the edge – and the comments from the rest of the team seem to back this up – it is still the definitive Amiga football game.*



RICHARD BAGULEY
AMIGA FORMAT



Goal! is, above all, a football game, and I'm afraid that as far as I'm concerned, this isn't a positive thing. After all, what is it all about? 22 blokes kicking a bit of wet leather around a muddy football field? Not my idea of fun...

Mind you, it is fun. There's an art to trapping and running the

*ball, but it's too easy to kick off and bomb straight down the field towards the goal. Mind you, most of the goalies are pretty good, so it's not always that easy. You don't get the feel of space on the pitch as with *Sensible Soccer*, and there's not the same tactical edge. Mind you I'll be coming back for more...*

STEPHEN BRADLEY
AMIGA FORMAT



*When these pretenders to the *Sensible* throne turn up you've got to give 'em a chance right? Not perhaps for the purist, *Goal!* seems to want to be all things to all men. There are loads of options but not enough attention to detail, the game is a mish-mash of styles.*

*Yet *Goal!* works. It's fast, exciting and immensely playable even though it's not particularly realistic – but who said it had to be? You don't get the sense of space that *Sensible* offers and the ball pings around like pinball. A bit gimmicky for me, but perhaps I'm being overly fussy. It's good, it's solid, but it's not *Sensible*.*

Goal!
Virgin Games ■ £30.99

- Difficult to get into, but rewarding when you stick at it. With practice some excellent moves and one-touch play can be achieved.
- No cup competition, but the usual host of options (and more).
- Very intelligent computer opponents who don't just stick to set pieces – they actually seem to think for themselves.
- A fine arcade game, and a big improvement on *Kick Off 2*, but it doesn't have the feel of *Sensible Soccer*.



88%

BATTLE ISLE '93



The Moon of Chromos

The unimaginable has happened: despite his enormous material losses, Skynet Titan has managed to recover and is preparing for a new, final attack.

The Drulls and Skynet Titan have both been searching for the vital energy crystals which have become rare on Chromos, and have managed to find some on a moon. But wherever the Drulls try to gain a foothold, they find the enemy has got there before them. Skynet Titan is mobilising his still enormous forces once more. Fighting has already broken out. Can the Drulls emerge victorious from this last battle?

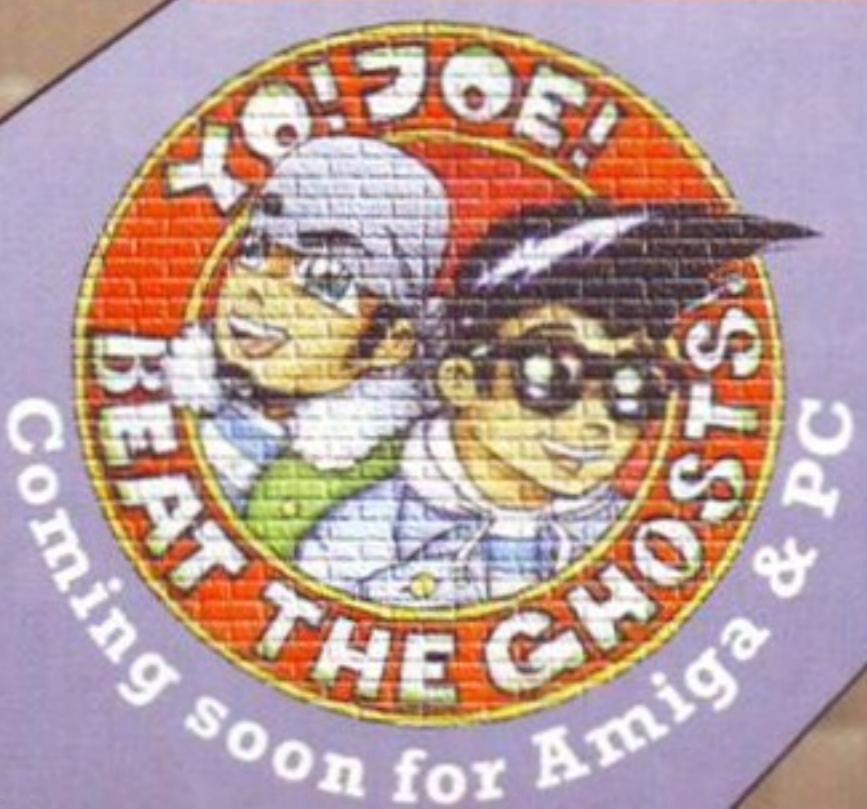
With its new maps, new music and newly created units, this game represents a milestone in strategic simulations. Even the most experienced BATTLE ISLE General will be forced to rethink his strategy in this continuation of the BATTLE ISLE saga, which also includes animated sequences.

Like all parts of BATTLE ISLE, this next step into the universe of BATTLE ISLE is designed for 1 or 2 players and can be installed on your hard disk.



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Vikings lost in space!
Strange, but true in this game. But how can you help the hairy long boat paddlers find their way home? It's all in the puzzles...



When a lost viking needs to get high, he just jumps on a bubble...



Olaf and his shield come in handy when you meet alien snails with a bad dose of catarrh.

You know the saying, 'there's comedy in numbers' (or something like that), well it holds true if you cast your mind back to the great double acts of our time: Laurel and Hardy, Abbot and Costello, Morecombe and Wise, Sapphire and Steel. And three can be fun-nee too. The Three Stooges, Three of a Kind, The Andrews Sisters – oh well, maybe three is a difficult number to work with and be funny, unless you are three Norsemen lost in space. Which brings us to Interplay's new cute puzzler cum platform game.



If you're experiencing that lost and lonely feeling friendly aliens provide you with helpful info.



Cutting remarks about people who haven't been on the Slimfast diet are popular in this game.

Vikings are the central characters in this port from the SNES to the Amiga. The plot is fairly irrelevant – some alien geezer, Tomator, has vikingnapped three lovable dudes who go by the name of Olaf the Stout, Baelog the Fierce and Erik the Swift. Oh yes it's all very Norse-like isn't it? Well no actually, because all the action starts and ends on Tomator's spaceship, and throughout play there's not a long boat in sight. Which I'm pleased to see, 'cos I can't bear all that raping and pillaging.

It's a team game

Teamwork is the name of this game, since you have to get all three of your clan to the exit in each level. And each viking has his own special skill which aids the other two in reaching the end. Olaf is a big fat slow lump who carries a Captain America-style shield which is handy for deflecting alien firepower and using as a sort of parachute; Baelog is the fighter of

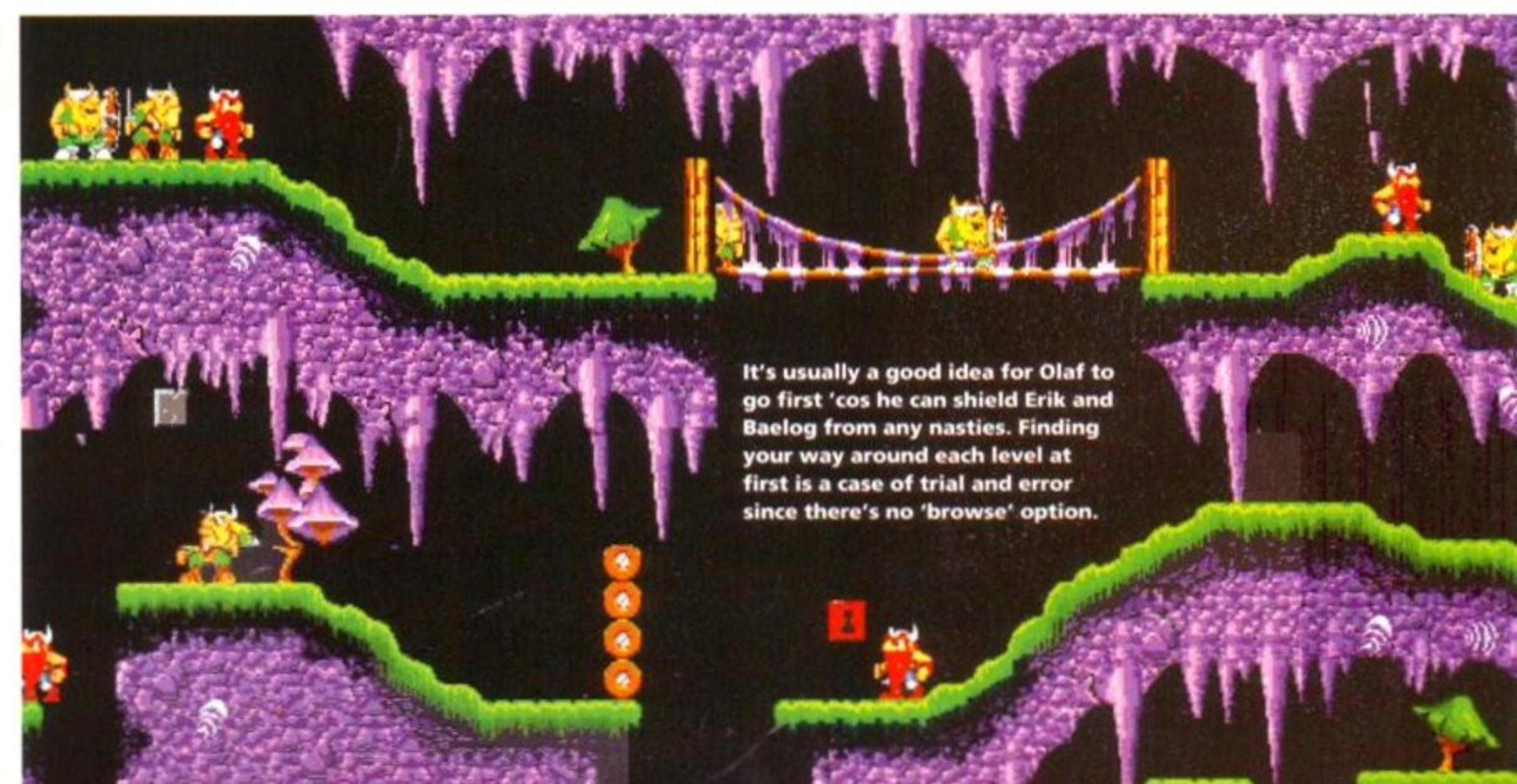


THE LOST VIKINGS
is available from
Interplay
on 0865 390029

the gang, and carries a sword to slice up enemies and a bow and arrow which can be used to flick otherwise unreachable switches; finally there's Erik who moves like greased lightning, and can leap and jump about like a frog on ecstasy – oh yes and he's great at nutting walls and making them fall down too.

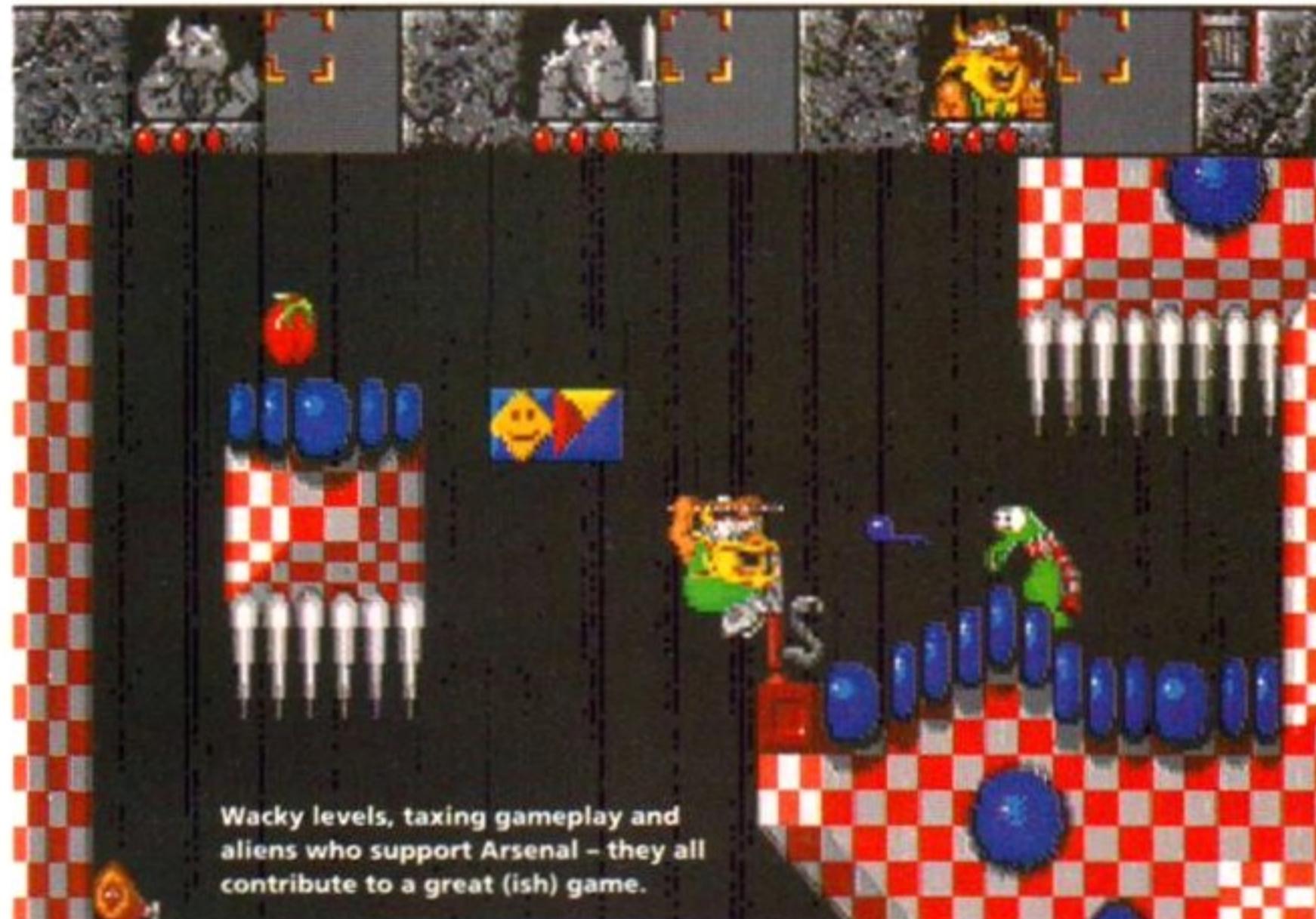
The Lost Vikings is in a very similar vein to *Humans* and even *Lemmings*. Each level has its quota of platforms, ladders, trapdoors, secret keys, weapon wielding baddies, special switches and it's up to you to try and fathom your way out of each tricky puzzle.

What Interplay have done which *Mirage* didn't with *Humans*, though, is make you



It's usually a good idea for Olaf to go first 'cos he can shield Erik and Baelog from any nasties. Finding your way around each level at first is a case of trial and error since there's no 'browse' option.

vikings



become attached to Olaf and co. Each viking has his own mannerisms - Olaf will pick his nose while holding off hordes of aliens with his shield, Baelog will stand around flexing his muscles and sharpening his sword, and Erik will pant away breathless after dashing about.

Throughout the levels there is a great rapport between them, their bickering is Stooge-like - as their speech bubbles crop up at the start and end of each level, they will have a natter or whinge at you if you take too long to complete a level - smatterings of *Monkey Island* methinks! All this makes you a tad upset if one of them falls and splats on a spike, or gets burnt by a flame thrower, thus making you more determined to get it right the next time.

So what's bad about this game? Well there's nowt up with the gameplay, and the soundtrack speeds you along at a fair old rate, and the game makes you chuckle too with some excellent characterisation. What is bad,

though, is some sloppy programming - many's a time when Olaf should be daintily perched on the end of a platform and in actual fact he's hanging in mid air. This is frustrating when you're trying to time your pixel-perfect moves.

VFM?

The price is high too - for £29.99, 37 levels isn't much cop considering the number of levels you get with other games. And my final gripe is it takes ages to reload the level once you've messed it up - and you're bound to do this (especially on the later ones, because they're tricky) since there's not a 'browse through' function like there is in *Lemmings*. So have a copy of *Amiga Format* ready for a good read while loading, otherwise you will go blimmin' barmy. In fact always have a copy of *AF* handy - it's FAB, much like this game, but the poor loading and lack of levels let it down.

Gary Lord

The Lost Vikings

£29.99

- Nice puzzler that has a real 'let me just beat this level' edge to it.
- The viking boids are definite cuties and their witty asides brought a wry smile to my boat.
- It's painful loading when you have to attempt a level again, but luckily it recognises if you have two disk drives.
- Encourages teamwork without having to go on a poxy outward bound weekend.

AMIGA
Verdict
FORMAT

79%

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THE MAKING OF MEGA DRIVE STREET FIGHTER 2

Street Fighter 2: Championship Edition on the Mega Drive is 90% complete. When the game is released in September, Sega are predicting a bigger rush for copies than with *Sonic 2*.

In this month's MEGA (the magazine 100% dedicated to Mega Drive and Mega CD), MEGA and Capcom proudly present *The Making Of Street Fighter 2: Championship Edition*, your **25-page guide** to the ultimate coin-op and (soon to become) the ultimate Mega Drive game.

If you're serious about *Street Fighter 2: Championship Edition*, then you really can't afford to miss it...



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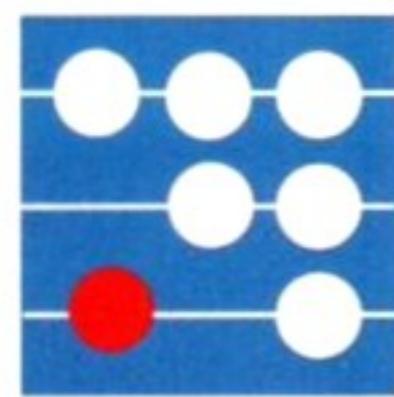


Bruno Brookes the popular Radio 1 and Sky TV presenter has joined Calculus

A keen Amiga 4000 owner and Panasonic fan, Bruno will be writing for Calculus, and is determined to take time out to visit as many stores as he can.

"I didn't realise just how many stores Calculus had, it's a real benefit to know that wherever I am there is likely to be a store near me, if I have any free time you can guess where I'll be".

Kind Regards



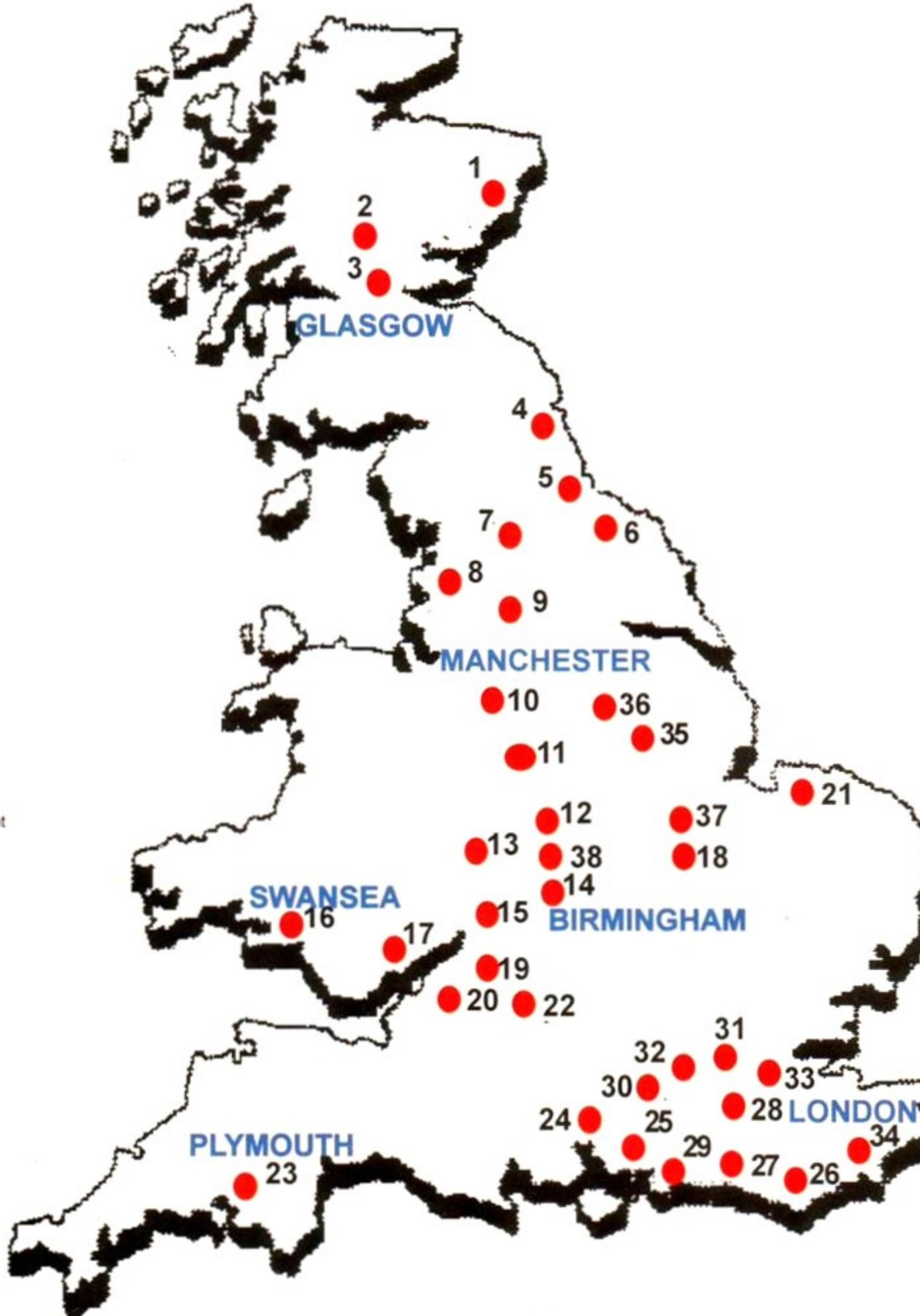
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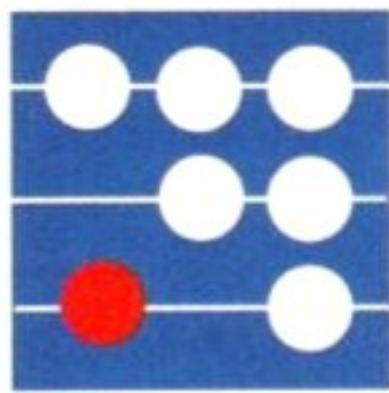
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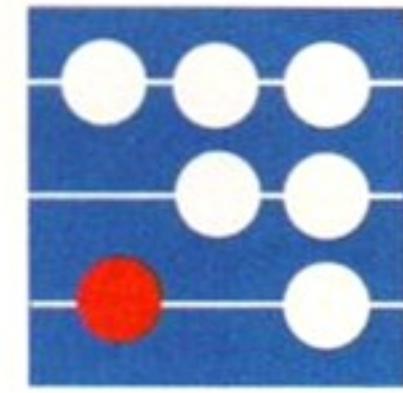
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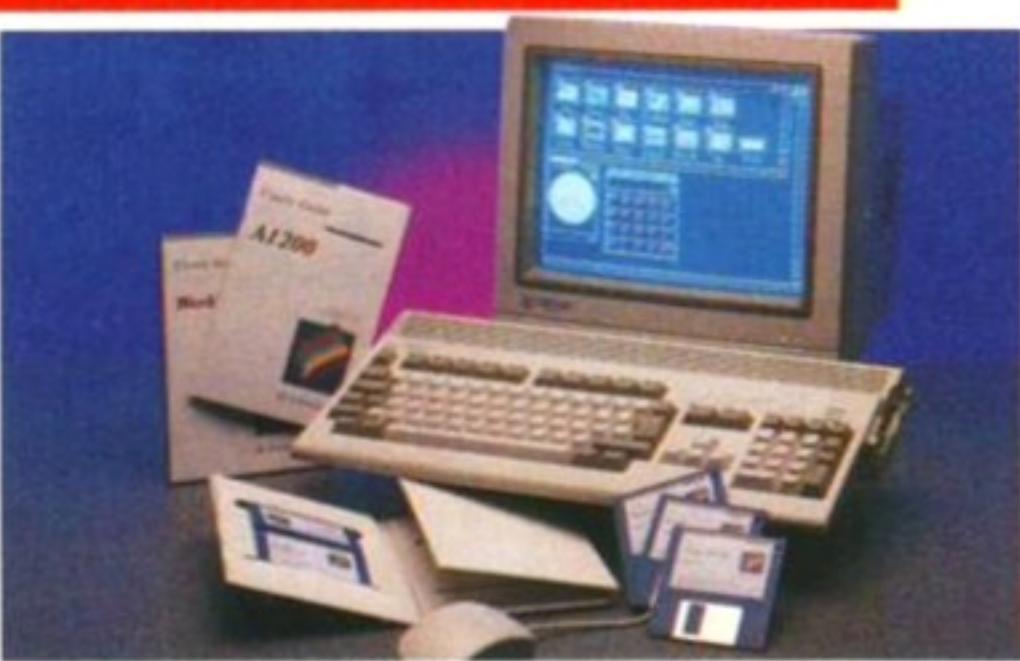
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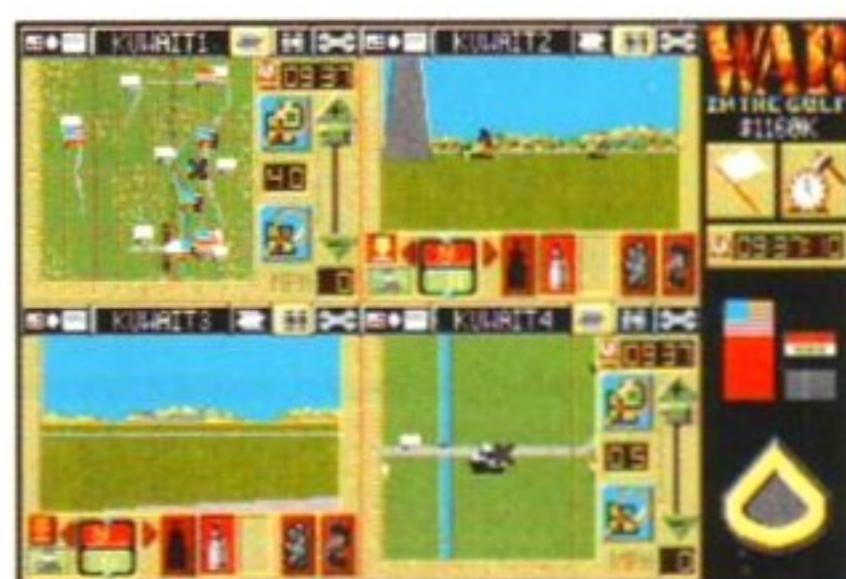
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This is what will happen. In 1995 the Israeli and Arab factions will shoot at each other. There will be many casualties on both sides. The situation will be somewhat confused for a while, and a slightly surprising result of the fierce fighting will be the development of two divisions of elite Iraqi Republican Guards in Northern Kuwait.

The United Nations will decide to send in troops to evict the Iraqi soldiers and once more the world will be ringside for another desert rumble set to go the full 12 rounds.

Take the M1 North

So leaving apart the slightly dodgy Gulf political issues, let's have a closer look at the tanks of the next major conflict.

War in the Gulf is the third in the *Team Yankee* series. Like *Team Yankee* itself, and more recently, *Pacific Islands*, it gives you control of 16 of America's finest and most dangerous armoured vehicles.



Battle LOST - Click here for debriefing

Winning isn't everything, you know. Sometimes it isn't even possible...



About now is the time that you wish your other platoons had even the tiniest bit of artificial intelligence.

War in the Gulf



Just when you thought it was safe to go back into the desert, the fighting starts again and you're in the front line. But is it fun being there?

Again, as in the first two games, you get 10 M1 Abrams main battle tanks and six missile-firing personnel carriers. These are carefully and artistically arranged into four platoons. The control options enable you to move these platoons separately, so this, really,

is the scale you've got to think about. Ranged against you are the forces of Mr Hussein's elite Republican Guard. Their company cars are T-72s, T-62s plus an assortment of lesser vehicles. Elite they may be, but they don't get the best of the Russian hardware, that's for sure. On paper and in the field your kit is better than theirs.

The problems start when you realise just how much of this not-very-good armour they have. Being Iraqis, and owning the world's

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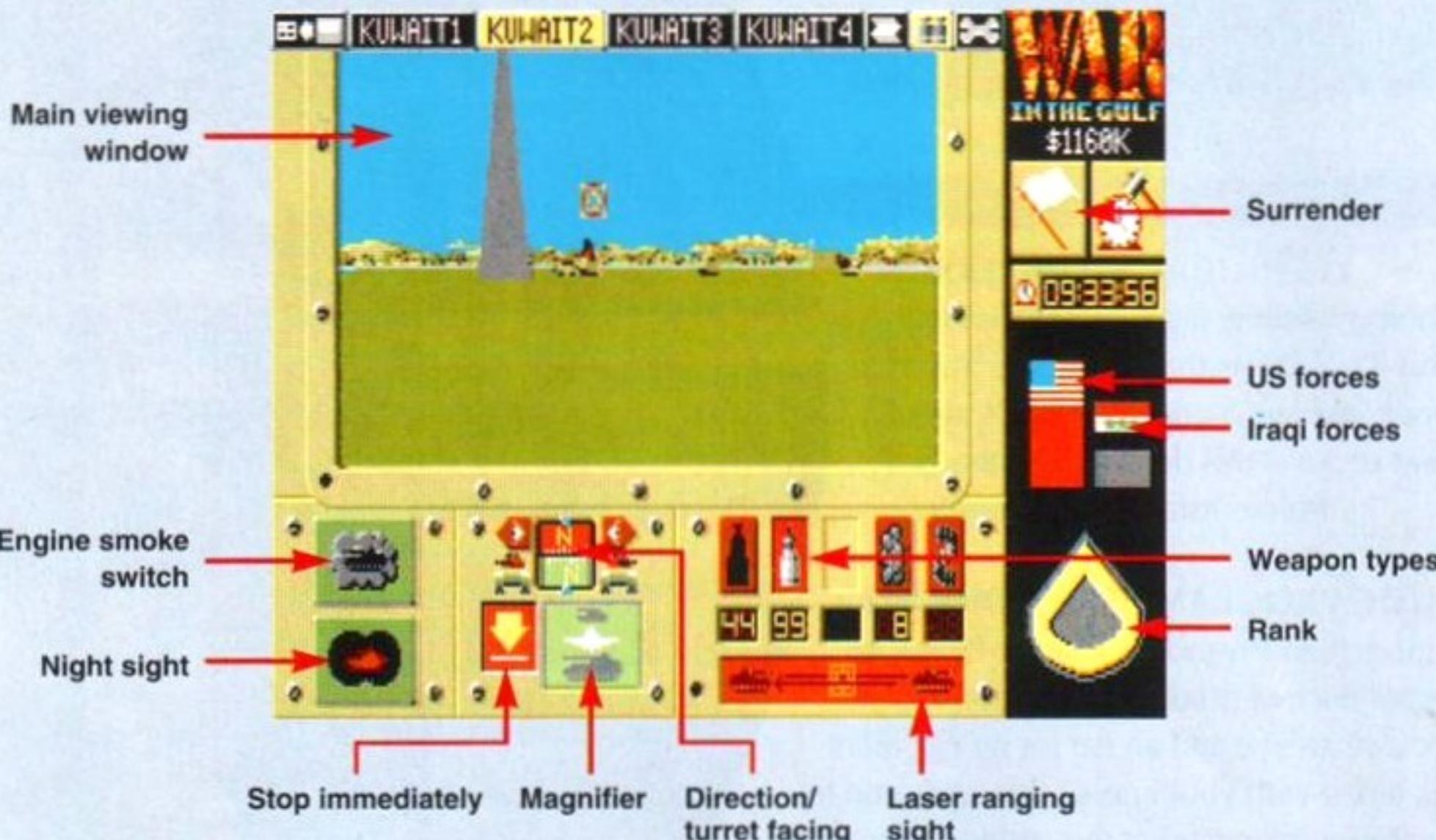
GET A ROUND IN

There are four types of rounds in the game (as well as machine guns). Each has a specific role, and it's worth getting to know them and their abilities.



- 1 High Explosive (HE). This is perfect against buildings, lightly armoured vehicles, ammo dumps and trees.
- 2 Sabot (also known as Armour Piercing Fin Stabilised Discarding Sabot). This is a small kinetic round used to punch painful holes in heavy armour. No explosive capabilities, its speed is its power. Use only against tanks.
- 3 TOW. Tube-Launcher, Optically Tracked Wire Guided missile. Long range, great accuracy and very dangerous. These sit atop your Bradley M2s and ITVs.
- 4 Smoke. Hides your tanks and makes you cough.

I LIKE DRIVING IN MY TANK



fourth largest army, they don't skimp on sending their troops directly towards you. It can be quite unsettling, in fact.

Bunkers on the Gulf course

Each battle is fought on a map which appears to be about five miles square. There are villages, woods and, certainly on the training screen, rivers. It's just like being in Aldershot, actually, except that it isn't raining.

You go to the map view and position your forces as you see fit, bearing in mind the exhaustive mission briefing beforehand. This has such objectives as blowing up ammo dumps, blowing up warehouses, blowing up factories and, if you can spare the time, blowing up the enemy as well.

Until you come virtually face to face with them, enemy movement is hidden. This feature is one of the strengths of the program. You chance across enemy tanks and all hell breaks loose. It's feasible to destroy your own vehicles in the heat of battle, and the fog of war is sometimes so dense it's best to stay at home and only venture out if it's strictly necessary.

After your first encounter, you're left to lick your wounds and study the recognition charts. At times during the melee you'd swear that Empire have used the same sprites for the T-72s as for your M1s.



To remove unwanted detail from the heat of a battle, switch to nightsights. Only targets (and the odd tree) show up and things are much clearer.

During the battles, you must fire every shot and make every movement yourself. There are no intelligent crews. The secret is to use the game's multi-view option. This splits the screen into four, and each quadrant can display anything you can see on the main display. So two platoons can show the map and two can show the tank commander's view. This is a great help when you're attacked unexpectedly. It's also a hindrance when you need to dance between platoons to co-ordinate your firing. Dive for the manual and learn those short-cuts is the best advice.

Iraq in the Kasbah

There's also the weaponry to consider. HEAT rounds, Sabot shells, TOW missiles. It's amazing what they can do nowadays. Each has a different role, and if you know which to use, you'll probably live longer.

After each bout you need to re-arm and re-equip your team. This is done by spending a huge pile of cash. You can vary the armaments of your platoons and you can juggle with their strengths as well. What you can't do is go AWOL with the dosh.

All in all, *War in the Gulf* is as good as *Pacific Islands* and slightly better than *Team Yankee*. This is hardly surprising since it's vir-



Sixteen vehicles all blasting in unison can be quite a moving experience. Especially if they're against overwhelming odds, and being destroyed as well.



The training mode shows you what to expect. Except that it's not nice and quiet and not filled with smoke, explosions and burning vehicles.



If you barrage at extreme range, you get a chance of killing the enemy before he can shoot back.

tually the same game. In fact, all that differs between it and *Pacific Islands* is the colour of the surface your driving across. Instead of a putting green, it's now a beige hospital carpet. The enemies use exactly the same equipment and you have precisely the same set up yourself. The missions are different, but not much. Hence the woods, villages and streams.

It's a pity that the game doesn't advance what is a fun and playable system. There are no helicopters, no new units and no new objectives. A large city covering the entire map would have been challenging, for example.

Although there's nothing new here, the missions do seem harder, which doesn't sound like war in the Gulf to me. Apparently, in real life the worst the Iraqis did was damage four M1s. Four out of nearly 2,000, that is. But you're faced with quite a task here. Unless your name's Schwarzkopf, moving and firing your 16 vehicles will tax you sufficiently by mission three.

Overall, this will appeal to die-hard *Team Yankee* fans and maybe those who have never played any of the series. It's the best of the three, but it's just not different enough.

James Leach

War in the Gulf

£25.99

- Fast, frightening and fun combat.
- Nice control methods
- Tough enough to grip you for ages.
- Equal mixture of trigger action and brains.
- Very similar to *Pacific Islands* and *Team Yankee*.



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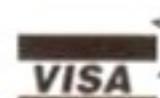


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This main cockpit display is what you'll be seeing most of in A320. The numbers in blue at the bottom left (next to F1 and F2) are your start and destination points. The number next to DF is the local radio frequency.

Airbus A320 American Edition

Let's face it, jet flight is duller than a wombat's butt. You get a giddy feeling in your stomach for about 30 seconds, then it's hours of utter tedium until you get another giddy feeling in your stomach and the plane lands. In between you get a few packets of peanuts, a plastic cup full of weak lager and a baby's shrill cry in your earhole all the way to Crete. Jet travel sucks.

You would have thought that those dashing captains of jet aircraft had a slightly more interesting time of it than the punters, but having played *A320 Airbus* I can report that flying the aircraft's drearier than travelling in it. *A320 Airbus* is what happens when lots of people with clipboards and pens in their top pockets decide to program a flight simulator.

The real thing

What we have here is a 'proper' flight simulator. Everything about the game is designed to look and feel like the real thing. Before you can fly you've got to file a flight plan and then there's the process of setting up your plane for flight, before finally you get to trundle your jet out on to the runway ready for lift off.

The Airbus was designed to be one of the safest aeroplanes around. To this end, the vast majority of functions are carried out by the on-board computers. All you need to do is tap in your destination on the flight computer and start the engines. Everything else is taken care

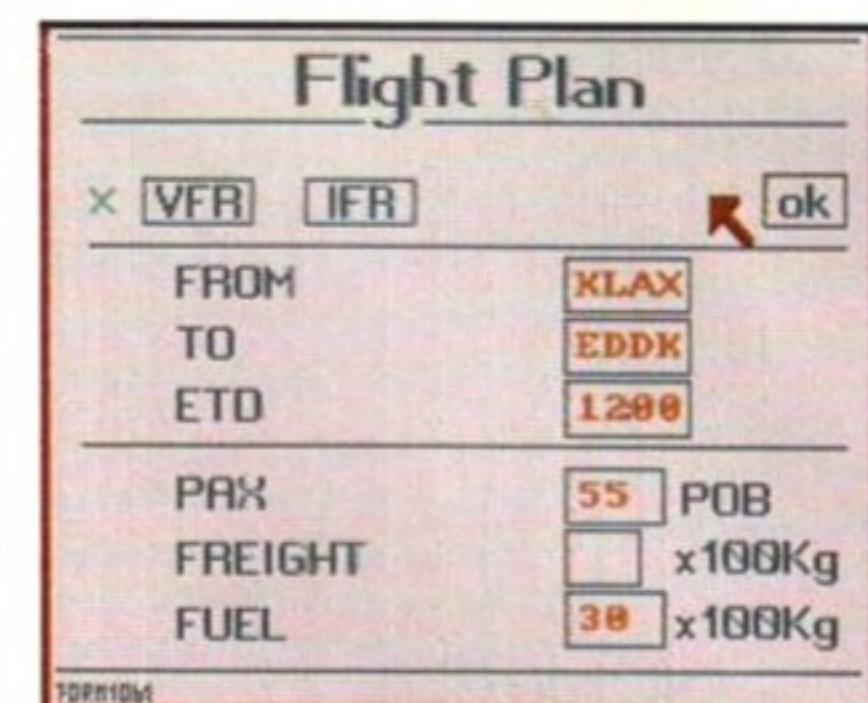
of, which leaves you plenty of time to flog imitation Rolexes and boxes of 200 fags.

Graphically all you get to see is a precise cockpit representation and lots of fields or sea beneath you. Occasionally a dial will move a bit (a cause for much celebration), but other than that all that happens is your engines automatically adjust their revs, the plane automatically adjusts its course and you automatically adjust your chair before falling into deep sleep.

The controls appear a bit confusing initially, but that's partly to do with the technical



Nope, he's not a left-over from a footy management sim, but the head honcho at your airport. He tells you off when you crash the Airbus.



Before you fly anywhere you've got to file a flight plan. PAX is the number of passengers.



Glance out of the left-hand window and you'll see either fields or sea. And an odd yellow dot.

terminology. Basically if you can get used to games like *Gunship*, then you'll have no problem getting to grips with this. The main 'fun' bit comes from picking destinations to be bored between. The game comes with two enormous books chock full of approach charts. These terribly interesting diagrams indicate radio frequencies, approach coordinates and the like. Give the game a couple of hours and you'll soon be able to flit all over the eastern or western sea boards of the United States looking at interesting fields and bits of sea.

Flyboys

It's not that *A320* is a bad game, it's just that unless you're, like incredibly, incredibly into all things with wings (and we're not talking sanitary towels here) then you're better off doing something interesting like creosoting the fence, brass rubbing or cataloguing your collection of early formica kitchen furniture. Definitely only worth checking out if you're a seriously obsessed flyboy or girl.

Commander Andy Hutch BORED.



A320 Airbus
£35.99

- Incredibly realistic simulation created in association with Lufthansa and Deutsche Aerospace Airbus.
- You could train a pilot to fly for real on this. And they probably will.
- Utterly dull.
- Graphically and sonically bland.
- Great for those hot muggy sleepless nights.



60%

400 GAMES INSIDE!

In the past four years, over 400 games have been released. Over 300 of those are still on sale and among those are many bright gems. But how many have you got in your collection? How do these games compare to the new releases of today? Find out in the PCF Gold issue, an extra edition of the magazine which is on sale now!



REVIEWS



Yes, we've got over 400 games on review in the PCF Gold issue - that's more PC reviews than you'll find in any other magazine - ever (we reckon)! Everything from the classic Gunship 2000 to the indomitable Strike Commander, from Darkseed to The Fate of Atlantis, from Dune 2 to Lemmings. How many of these classic games have you got in your collection? And how many of them should you avoid like the plague? There's only one way to find out - get down to your newsagent now!

TIPS



The PCF Gold issue is split into a variety of sections including adventures, simulations, role-playing games and strategy games. At the end of each section we've got pages crammed full of tips, solving the very best games ever released and providing some hints and tips to help you get more out of the dusty old ones that are lying at the bottom of your cupboard. Monkey Island 2, Zool, Dune 2, Ultima 7, History Line, X-Wing and Leadbetter's Golf are just a handful of the games we've tipped.

PREVIEWS



Then there are the pages of previews. Do you know when Frontier Elite 2 is due for release? You do now. Did you know Renegade has produced a scrolling action game which dwarfs all of the competition?

Right: if your agent faces death, then use the self-destruct option. This wipes him out and the surrounding area. This column: five stills from the animated intro to *Syndicate*.



Bullfrog's new cyber strategy game is VFM – Violent, Fun and Morally unsound, intrigued? You will be...

Syndicate, *sindi-kat*, *n.* Abbr. synd. An association of people or companies organised to promote a common interest. The new game from Bullfrog, makers of *Populous* 2, is sinister. If you've ever seen films like Ridley Scott's *Blade Runner* or George Lucas' *THX 1138*, you'll know what I mean – futuristic science-fiction which is eerily life-like, and eminently plausible.

Syndicate is a strategy game, where the 'common interest' is complete takeover of the world. Of course, this has been the subject of films and games since the year dot, but rarely has it been as effective as with this game. What's differs here, though, is you're not the megalomaniac seeking ultimate power. Instead you are an agent who works for the big cheese, the syndicate, trying to do a job and get up the employment ladder. Morals are out of the window – you have to do what you are told, no matter how weird or immoral the orders are.

Cybermen

You are in charge of a number of cyborg agents, who are programmed to follow your orders via remote control. You monitor progress using the display screen, which is also used to give you your orders and progress reports. The cyborgs are either sex, but all basic models have a similar strength and resilience.

You are given a certain amount of money to equip your 'borgs through the first mission. After this, raising further cash is all up to you. There are lots of ways to raise money, including raising the taxes for the people in the territories which are controlled by

your syndicate, and capturing enemies and their weapons so that your syndicate can use them in their research. They pay well for any enemy materials you bring back.

The manual blurb is worth a mention: "After winning a mission you have earned the right to levy outrageous rates of tax on the helpless citizens... If you're as popular as the Sheriff of Nottingham as a result, who cares! He didn't have armed psychotic cyborgs for back-up."

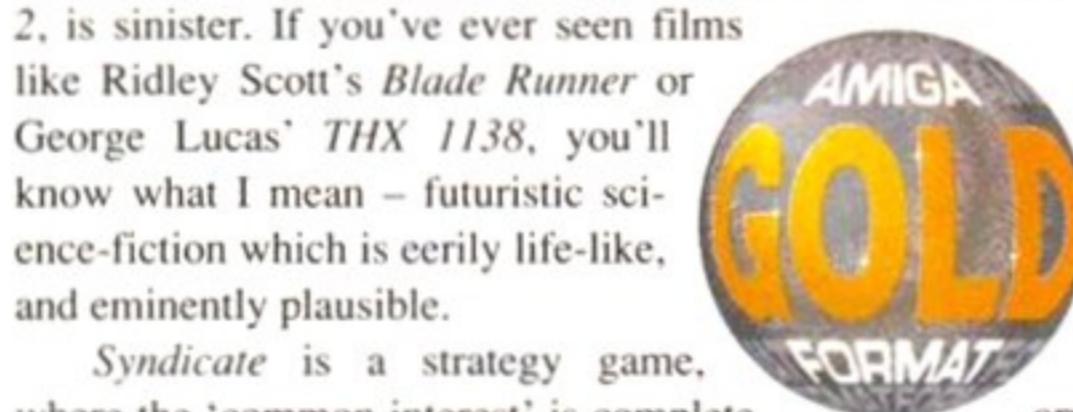
Mission possible

The first mission is easy. You buy a pistol, and maybe a shotgun or a medikit for each of your four active cyborgs. It's not worth investing in extra body parts yet, because the mission is really easy and you haven't got much money.

It is, however, a good idea to plough funds into researching new equipment. In the later missions you will need powerful weapons and well-equipped cyborgs, so it's best to research into advanced technology early on.

You can actively research in two main areas: Modifications and Equipment. The Mods are things like more powerful legs, and a strengthened chest cage to help protect your 'borg – see Cyborg Technology. The equipment is split into three: Automatic, Heavy and Miscellaneous. Investing in Automatic will bring in weapons such as an Uzi sub-machine gun; Heavy will yield weaponry like the Gauss gun; while Miscellaneous will produce useful items such as an auto-mapper or an access card. See 'A Call To Arms' on the next page.

Once you've set the research going, and kitted out your crew, mission one begins. >



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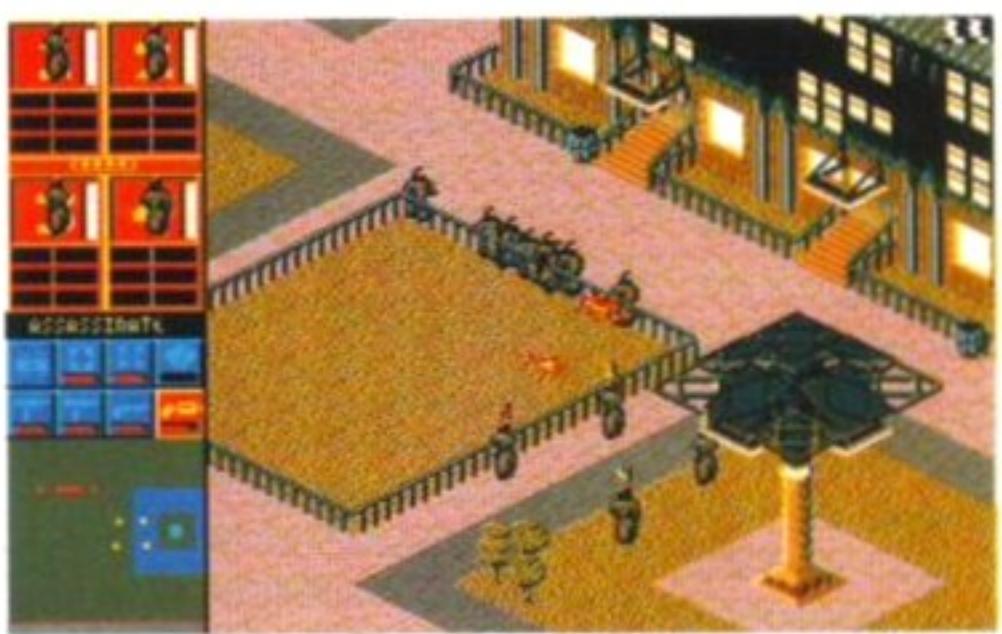
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Once you've set the research going, and kitted out your crew, mission one begins. >

Syndicate



"Does the name Custer mean anything to you? The enemy syndicate finds strength in numbers..."

This involves going to a city, and killing two enemy agents. They don't put up much of a struggle, and you soon hear a robot telling you "Mission completed".

Syndicate will then display a world map showing the amount of territory which your syndicate controls. The next area available for a takeover bid will flash, so clicking on it will accept that mission. Later you will find there is more than one route available, so if you get stuck in a level you can always try a different route.

By now your research should show results. The Equip screen will have a larger list of available equipment – for a price – and you can select these for your 'borgs. Now may be the time to add more money to the research plan, but how much is up to you.

Heavy policing

The 50 missions vary in size and complexity, but rarely can you complete a mission first time. Fortunately you can save your position at the end of a mission, so if you screw up you can always try again.

In most areas you will find a police presence, who

don't really bother you until you draw your gun. If you shoot your gun, then both policemen and enemy agents will rally round and try to shoot your cyborgs. If you manage to take any of them out, they will die and leave you their weapon. Sometimes it's an advanced weapon like a Gauss gun or a laser, and if you keep it until you finish the mission you will be paid for it. Your syndicate will then be able to create the weapon. Using this method you could obtain a Gauss gun on mission seven, whereas using research would take much longer. Neat touches like this abound – it's very like real-life, in that everything you do in a mission will have a knock-on effect in the rest of the game.

All engrossing

Syndicate is a very involved game, mixing strategy and arcade elements for a truly fun game to play, and one which will keep you coming back for more. Unfortunately for A500/600 owners, the game does run rather slowly on these machines – it's still playable, though. Still, if there was ever an excuse to upgrade your machine... Although there have been power-struggle games before, *Syndicate* approaches the genre from a new direction, and playing it is a refreshing experience (as well as a damn good tension release). Also,

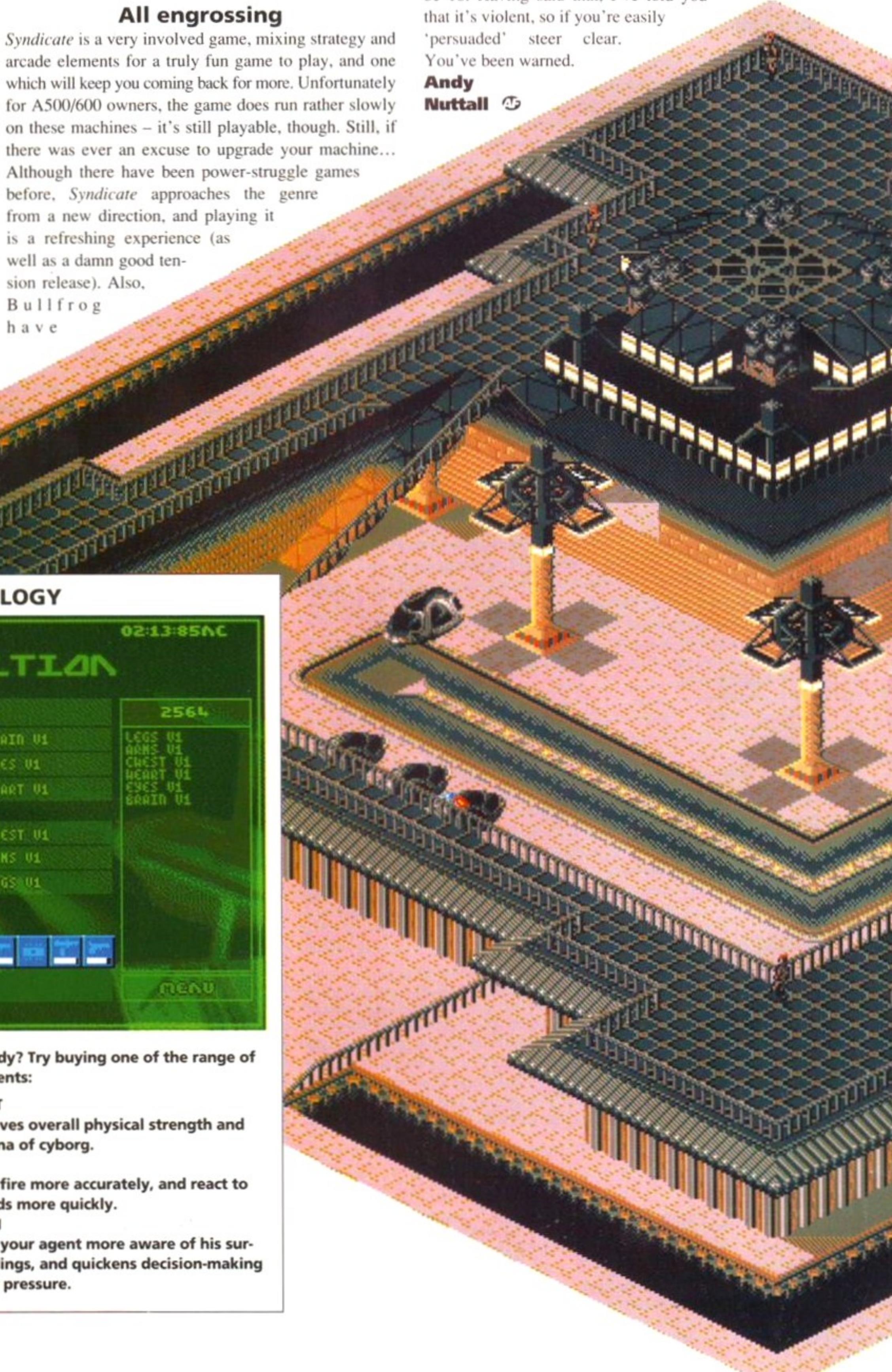
Bullfrog have

other missions in the pipeline, along with a multi-player version where up to eight people can play against each other, each using a separate Amiga.

Although *Syndicate* is incredible fun and massively addictive, I would have trouble recommending it to kids. There are some disturbing overtones to the game, which occasionally go beyond simple sci-fi.

Head Bullfrog Peter Molyneux commented: "I didn't originally set out to create a violent game, but having said that I didn't want to pull any punches. Obviously it is violent... but there is nothing I would like to see more than ratings in computer games." Well, if *Syndicate* had a certificate, it would be 18. Having said that, I've told you that it's violent, so if you're easily 'persuaded' steer clear. You've been warned.

Andy Nuttall ©



CYBORG TECHNOLOGY



Suffering because your cyborgs are just a bit too nerdy? Try buying one of the range of add-ons that *Syndicate* offers you to modify your agents:

ARMS

Enables your 'borg to carry heavy items with no loss of speed.

LEGS

Moves the cyborg more quickly around the mission zone.

CHEST

Metallic chest plate to help survive direct hits. Also contains explosive charge for self-destruction.

HEART

Improves overall physical strength and stamina of cyborg.

EYES

Helps fire more accurately, and react to hazards more quickly.

BRAIN

Make your agent more aware of his surroundings, and quickens decision-making under pressure.

A CALL TO ARMS

Syndicate, being a game based around a violent futuristic world, naturally places a range of powerful weapons at your disposal. Let's take a look at them...



PISTOL

The weakest of all the weapons, but available for no cost. Medium range, useful as a back-up weapon.



SHOTGUN

Pump action shotgun with a large spread of shells. Useful at close range.



UZI SMG

Quick-firing weapon with a medium range. Fires many shells, and costs very little to reload.



LONG RANGE RIFLE

Highly accurate, with a very long range. Single shot, useful for assassinations.



FLAMER

Produces a stream of napalm-like ignited jelly which sticks to target and burns. Highly sinister.



MINI GUN

Heavy motor-driven machine gun with a fairly long range. Most devastating when fired in short, accurate bursts.



LASER GUN

Small high-powered laser with a long range and high accuracy. Useful for sniping and disabling vehicles.



GAUSS GUN

Portable long-range rocket launcher, with three rockets. Useful for destroying tanks and massacring crowds of people.



TIME BOMB

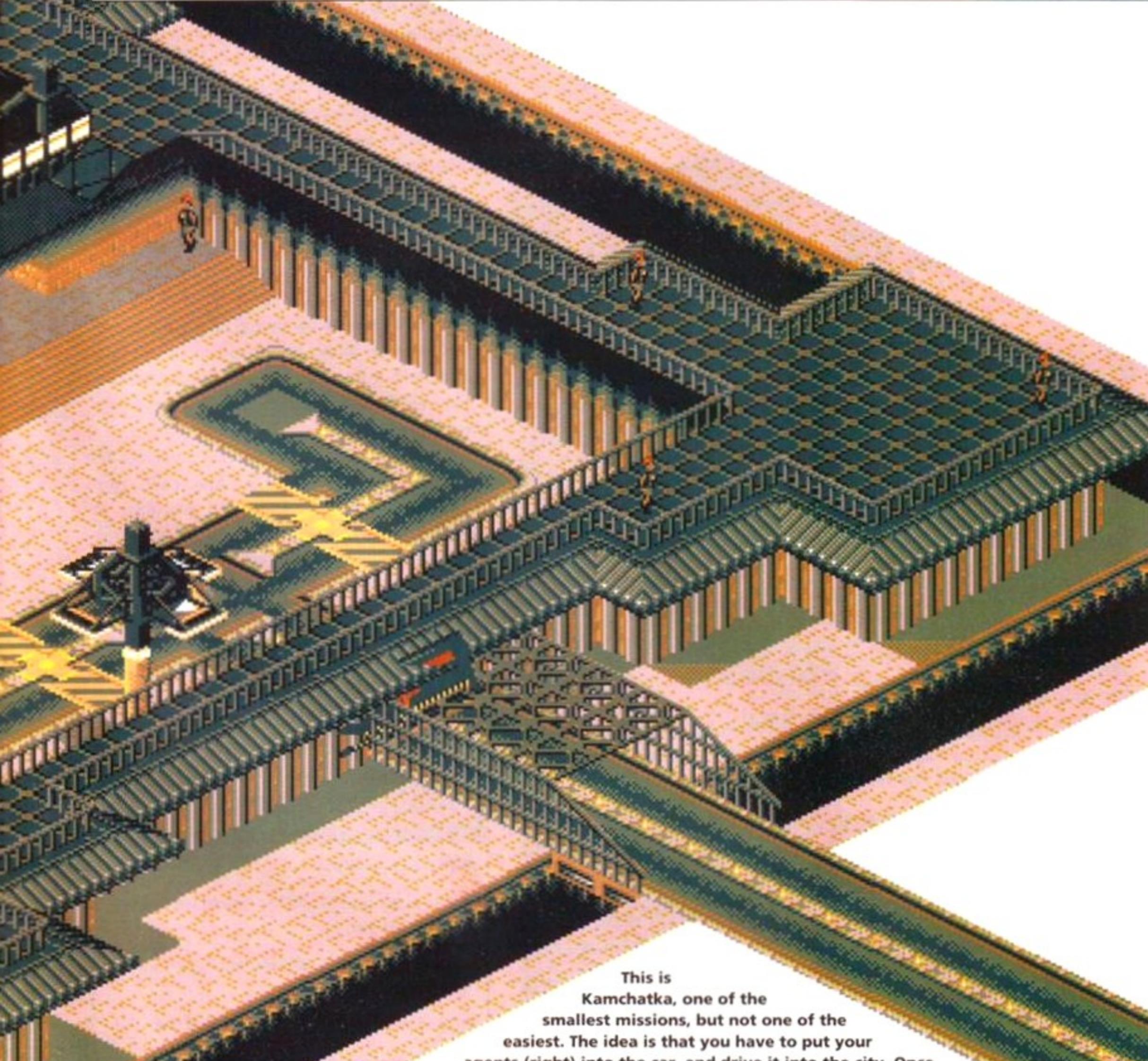
High explosives, complete with timer and detonator. Leaves structures intact but erases people and vehicles.



PERSUADERTRON

The single most important weapon of all. A very short range weapon which fires a chemical at a target, and brainwashes the target to your way of thinking. The target then follows you zombie-style for the rest of the mission.

If you 'persuade' 16 civilians you may also 'persuade' a police officer. Persuade 32 civilians and you can go grab an enemy agent to add to your cryogenic stock of cyborgs. You are paid at the end of each mission for all the 'persuaded' civilians who survive.



This is Kamchatka, one of the smallest missions, but not one of the easiest. The idea is that you have to put your agents (right) into the car, and drive it into the city. Once inside, you have to take out all the APCs (Armoured Personnel Carriers), and terminate anyone who gets in your way. You should have ploughed a lot of money into researching new weapons by now. If you haven't, then you're likely to get wiped out here because the enemy syndicates who rule Kamchatka are armed with Gauss Guns - possibly the most powerful (and scary) weapon to be found in *Syndicate*. They only have one, however, so a good strategy is to split your team up and sacrifice one of them to the man with the Gun. Lastly, hijack the ambulance, and drive very quickly out of the city - keeping clear of the other enemy agents.



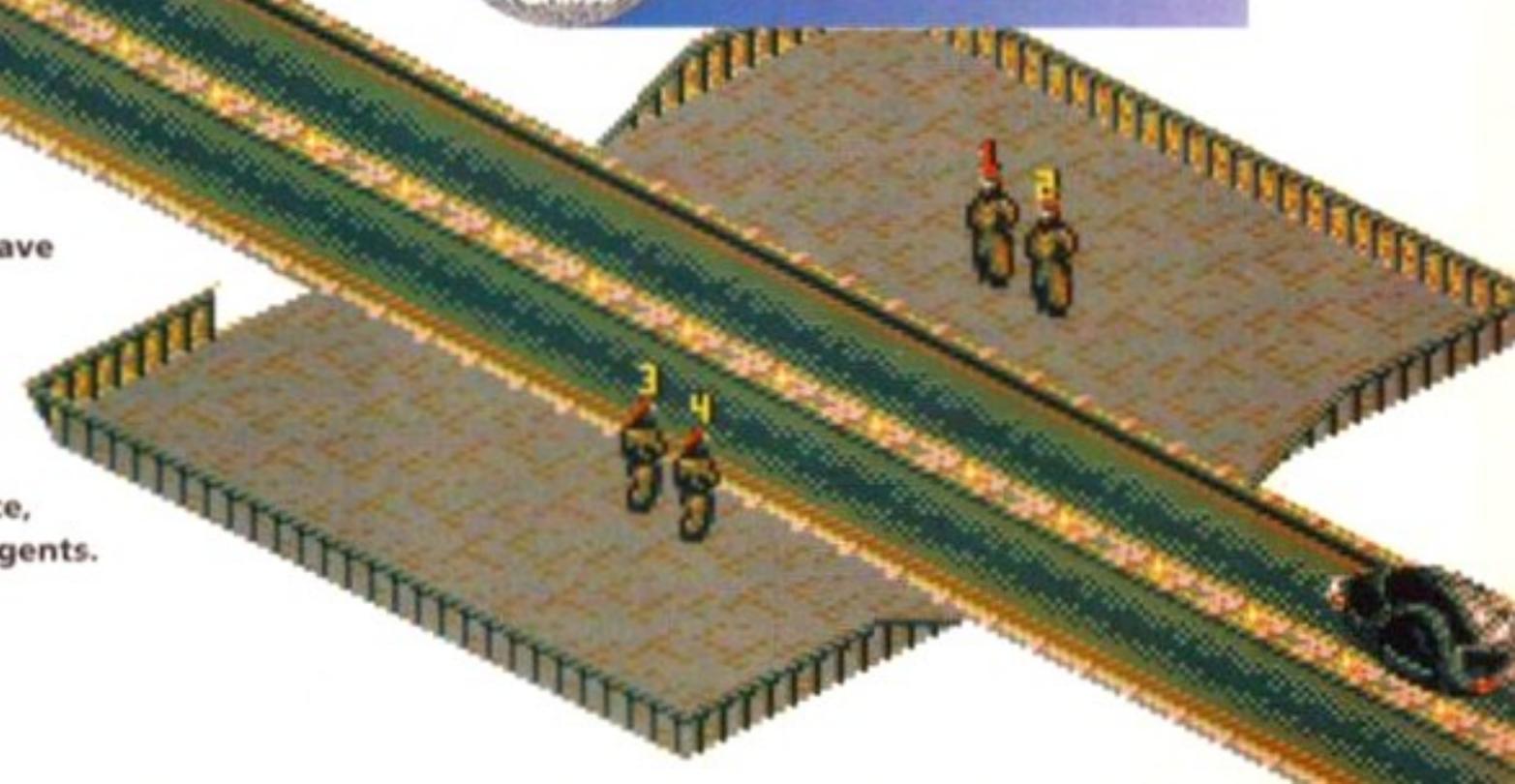
This is your boss. If you get to this screen, it means that you've failed, and you will face imminent termination.

Syndicate
£34.99

- Adrenaline-pumping action mixed with clever strategy to give a supremely polished and well-thought-out game.
- Superb *Blade Runner*-style graphics and effective sound give the game a dark, doomy atmosphere.
- Controlling the vehicles is a bit fiddly.
- Pure, unashamed violence...
- ...and/but incredible fun to play.



91%





What on earth has this poor girl ever done to be saddled with a name like Zmira? Perhaps it's a family tradition that all the girls are given ridiculous names just to get the priest's tongue in a twist.

Super Cauldron



Now which one's which? Stalactites or stalagmites, I can never remember. Do tights go up or down? I suppose it depends what sort of girl you are.

SUPER CAULDRON
is available from
Titus Software
071-700 2119

There are 12 spells to collect, and you will need all of them to complete the game. At the start all you have is the stone spell. The spells can be split into two types: the weapons and the 'really useful things'. The first category includes fireballs, lightning and bombs, while the second contains all the weird stuff. There are magic staircases and bridges, teleportation, a circular saw and my favourite – multiplication. Stop raising those eyebrows, here you can split Zmira into four little clones. They run off, killing the enemies surrounding you as they go. Another 'useful' is the metal melter which, strangely enough, melts metal doors.

We're surrounded Captain

This is probably one of the hardest games that I've ever played. At least most adventure games give you a chance to think. This one fires cute little animals at you like bullets with your name on them. You can't afford to stop and scratch your head for a moment, because some vulture or bat will try to rob you of your precious energy.

Super Cauldron is difficult – much harder than, say, *Arabian Nights*. And each play seems to be over too soon, but you have to launch back into the fray, refusing to let a simple puzzle/adventure/shoot-em-up get the better of you. If you're a mean match with a joystick then you will probably find this challenge holds your interest in the game for longer than normal, but if you've still got your 'L' plates on, I'd steer clear of it. Now, does anyone know how to pronounce Zmira?

Sarah Tanser AF



Under the gaze of Her Majesty the Witch the Super Cauldron Formation Bat Team perform their own rendition of 'kill the witch'.



I must be hallucinating. First I'm chased by rabid rats through the wood, then I'm attacked by pumpkins. It's getting to be one of those days...

Super Cauldron
Titus Software ■ £25.99

- Extremely difficult.
- Too many horrid nasties, which just keep a comin' at ya!
- Excellent mixture of shoot-em-up, puzzler and adventure game.
- Need your thinking cap on for this one.
- Brilliant music and sound effects.
- Good effects for the spells.



70%

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Human faces suddenly appearing for no obvious reason are the sort of exciting things you can expect to see when playing Prey.

Prey

Almathera Systems ■ 081-683 6418 ■ £25.99

Apparently, asteroid KG - 42 used to be a nice, quiet sort of place to live until the aliens moved in next door. So property prices plummeted, and the aliens eating everyone didn't really help the situation either. The powers that be thus decided to send you in to sort out those nasty aliens once and for all, and to help rescue any refugees you find lying around the place.

Well, at least that's what I assume is happening. This game doesn't come with much information, except for a single paragraph on the back of the CD box. There is an insert, but all this tells you is how to control the game. The controls are pretty minimal, with the usual forward, back and turn, and the two keypad buttons giving a status screen and a map of the area, showing you what to do and the objective.

I know that CD doesn't have the fastest transfer rate known to man, but this game hardly pushes back the boundaries. Each time you enter a new zone, or request the map, you wait at least five seconds for something to appear. I wouldn't mind if the clock stopped, but it doesn't, so just after going through a doorway, you're stuck there waiting, but the clock is still ticking away. With only one minute and 40 seconds of oxygen to start with, every second counts.

Apart from moving around the colony, there is also a combat section where you and an alien slug it out. This uses some nicely treated digitised images to show the aliens, but it doesn't really work, especially with a CDTV keypad. You attack with button A (which has a nice machine-gun sound) and dodge with button B, but this doesn't seem to have much of an effect.

Nicely drawn and rendered 3D graphics abound, and the sounds add to the atmosphere, with heavy breathing and good clunky footsteps as you move down the corridors. If you're really up on sci-fi films, you could also play 'spot the sample' while you're waiting for things to load. Let's start it off with the breathing - from *2001: A Space Odyssey*.

The game is rather similar in feel to *Infestation* (reviewed in AF10), but you don't get the same feeling of being in control. There certainly isn't the same degree of background, and the control method is much more simplistic. There is a good game in there somewhere, but the bad design, long access times, lack of proper documentation and extreme difficulty conspire to make it a game that won't last too long.

Richard Baguley



55%



In the midst of a punch up with an alien in the fight practice screen, which is a question of dodge, dodge, shoot and dodge.



AMIGA POWER

New issue out July 8.
Buy it and we won't do this again.



Now with added colour in the backgrounds, five extra levels, and full A1200 compatibility. It's the all new improved Robocod.

Robocod AGA



There's an unwritten rule in the game reviewing business that says you can't start a piece with the words 'once upon a time'. But now we've got the first couple of sentences of this review over and done with, we don't have to worry about silly rules, especially ones that no-one has ever bothered to even write down.

Once upon a time there was a game called *James Pond*, and it wasn't terrible. You wouldn't have sold your granny to get a copy, but you might have spent about £25, or less if you had bought it by mail order. Since the game was an unmitigated success the people who made it took the tried and tested, Hollywood approved, course of action and made a sequel. Like most sequels this one, code-named *Robocod*, wasn't as good as the original. Unlike most sequels it was much, much, much (you get the picture) better. *Robocod* took the book of Amiga platform games, read it from cover to cover, cut it up into little pieces and then reassembled it in a way not completely dissimilar to the one used by William Burroughs in his writing of *Nova Express*. The result was a game that, at the time, completely redefined Amiga platformers. Unlike, go on, I'll say it... *Zool*, which was just wow!, *Robocod* was wow!, and it made

you think as well. The bonuses were hidden so cunningly that even today, after over a year of hard playing, I come across new ones. The cheats were so clever that you'd think it wasn't intended for computer games players at all, but for Oxford undergraduates.

OK, I may be getting all misty eyed and nostalgic here, but I've just heard some really great news. Millennium are bringing out

Robocod for the A1200, and I'm going to get

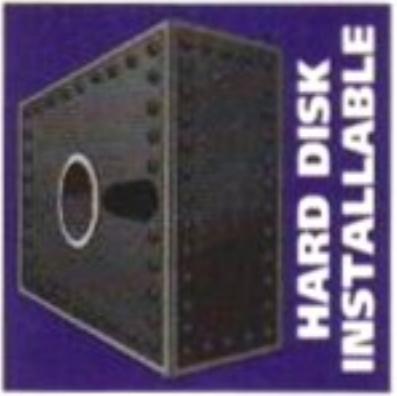
to review it for *Amiga Format* magazine. The

pinnacle of my career, sans doubt!

Tangible assets

Now there are more than a couple of games that have been rehashed for the AGA Amiga baby, but none have really added much to the original. Millennium have avoided this criticism by adding a very tangible, and pretty tricky, five levels to *Robocod*. And they didn't even bother to tell me. I just found myself playing a game I thought I new inside out, when BANG! There I was charting unknown platforms. And extraordinary fun it was too.

The backgrounds benefit in most places from the 256 colour treatment, but the sprites have been left as they were. It's good to see that Millennium showed more restraint on the Amiga than on the Mega Drive version of



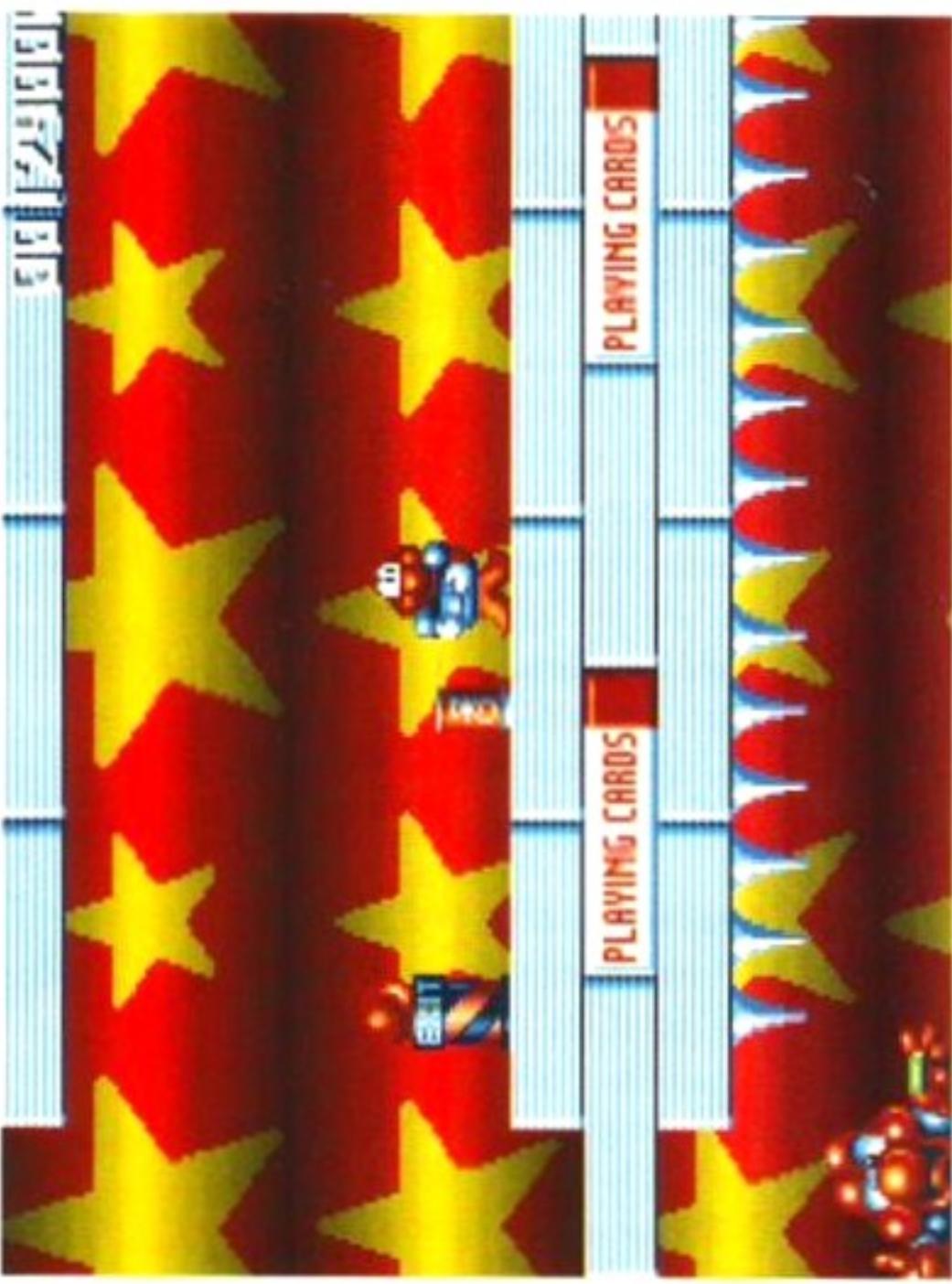
So now the bit where we tell you whether you should buy it. This is a tricky one because the game poses an interesting dichotomy, depending on whether you own the original or not. So here goes. Yes, if you don't have a copy of the original then you should have this – it's the best game yet for showing off the A1200, and it's a huge great bag full of fun too.

If you have a copy of *Robocod* non AGA, don't bother with this. The original works fine on an A1200 – just disable the CPU caches and use the original chip set. The AGA version is a dream, but it's the kind of dream that costs £25.99, and for just five more levels and 224 more colours, it ain't worth it. On the other hand, if Millennium were to offer existing owners an upgrade for say £7.99 I'd say do it.

Marcus Dyson ©

Robocod AGA
£25.99 ■ Millennium

- Even more colourful than the (very colourful) original version.
- Five new levels of puzzling platform fun.
- So many hidden bonuses and secret levels that even the programmers probably haven't found them all yet.
- Works on an A1200 without having to go through the tedious boot options rigmarole.



Flight sim buffs listen up! This is no ordinary game – and it's not just gunships you get to control. If you're power-hungry – feed on this...

Having already done flight simulations about hidden stealth (*F19*) and maximum overkill (*F15*) MicroProse's latest helicopter sim is the greatest yet. Starting out as a lowly Warrant Officer candidate, you go through an entire career as an American Army helicopter pilot.

You can eventually command a squadron of four pilots on many different mission types. But first, though, you have to convince your superiors that you are up to the job. To start with, only training missions and single chopper flights are available. When you have clocked up enough points and decorations, and you are offered a commission.

Crashing choppers

Gunship 2000 has more than just gunships in it. They're no good for picking up troops or dropping off cargo. You can choose from seven different helicopter models, although some are reserved for the higher ranks. All of which makes for a long term game.

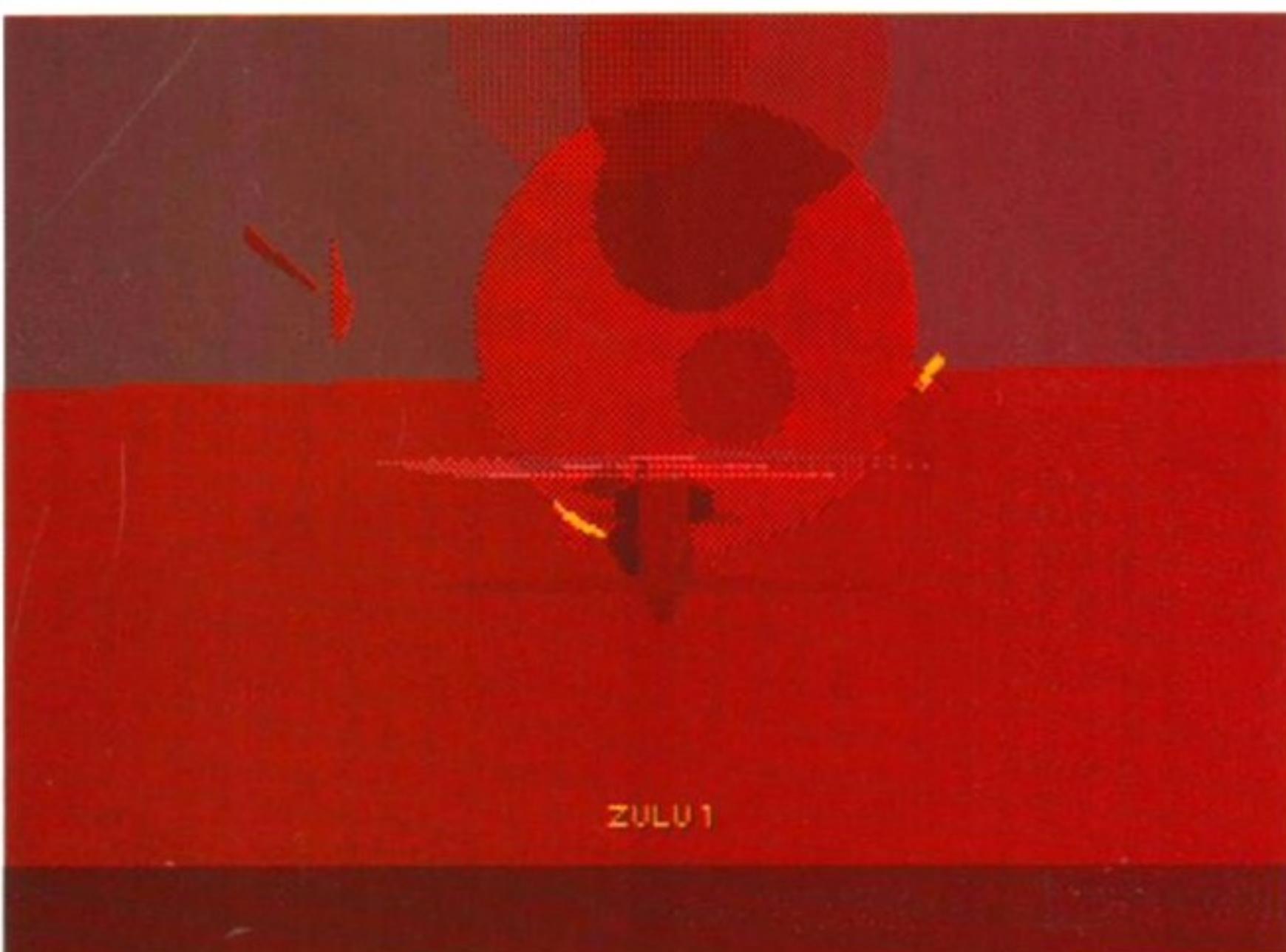
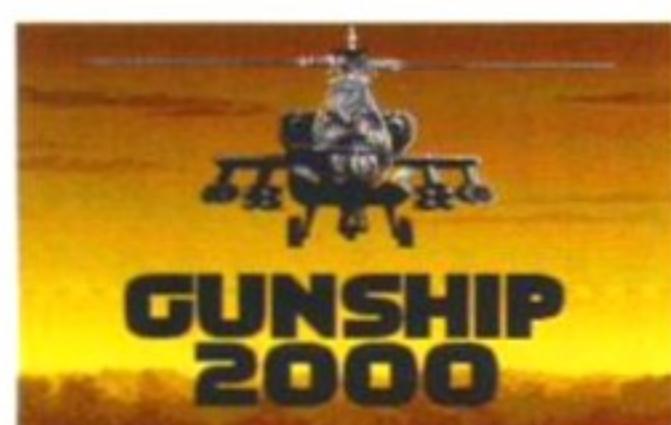
Choppers are notoriously difficult to fly, but you can make it as realistic or easy as you wish. 'No Crashes' is recommended unless you are very confident – there are no parachutes in a helicopter!

The music, sound and background graphics are of the highest standard. The intro is



Absolutely the best part of the game is that the 'world's surface' isn't flat. That means you can happily sneak up river valleys in your Apache gunship. Stay below the horizon and they won't see you until you pop up.

Gunship 2000



Damn, shot down again and everything goes red. Just one shot can knock you out of the sky, although it's much more usual to receive gradual damage rather than the instant kill.



GUNSHIP 2000
is available from
MicroProse on
0666 504326

abysmal mind you, but there are plenty of more worthwhile features.

The 3D graphics are truly excellent. Topological 3D is what MicroProse call it. Although most of the terrain is still flat, the hills and valleys really make the game, because helicopters operate at tree top height. The rivers flow between banks, and the railways go through tunnels in the hills, even on an A500. The A1200 is the preferred Amiga to play on – the game doesn't have 256 colours but it does use faster machines to the full.

Smooth operator

Everything moves very smoothly. Three different detail levels are available, as well as some fine tuning options like full distance 3D. This option occasionally results in your co-pilot/gunner (CP/G) doing what resembles a Max Headroom impression.

As your situation changes – a new target is acquired, or an incoming missile is detected – the CP/G tells you. When a lot of things happen at once, they just can't keep up. The CP/G can also be set to activate your jammers or



All the various helicopters have different cockpit views. The Blackhawk has side-by-side seating, rather than standard tandem gunship arrangements. In reality, a Blackhawk would be lucky to get this close to a surface-to-air missile and survive.



Selecting helicopters and weapons is an easy point and click job – the tricky bit is making sensible decisions on what's best for the job in hand.



Not all of the equipment is USA or Soviet in origin – some British objects are in there too, like the Challenger Main Battle Tank seen here.

HOW TO GET A PROMOTION

The key to the game is to keep completing your missions as quickly as possible. You can play *Gunship 2000* as an arcade game, by setting training missions – on these, flak and missiles does no harm. However, training missions don't get you any points.

You can either keep playing as a Warrant Officer, on your own in your own chopper, or accept promotion. Personally, I find that flying single missions is more fun than commanding a flight, but true simulation fans will probably appreciate the extra challenge. You cannot jump into the cockpit of the helicopters under your command – you can only give them orders from the map screen.

Finally, you can elect to play a campaign. This means commanding a flight over many missions, as a war ebbs and flows. Completing a campaign against elite troops with all the realism settings on will shoot you up the ranks. Maybe if you keep doing that, you'll make it to Brigadier General.

decoys and fire the weapons if you can't handle the pace.

Talking of weapons, if you are bored of seeing a limited choice, this game has the lot. Cannons (different choppers have different types), Hellfires, Tow 2s, three kinds of Hydra and some new ones like Sidearm and Hellstreak are bundled for a very good measure. When commanding a flight, certain weapons and helicopters are not available – a neat (and demanding) touch. You have to be familiar with every weapon system in case your favourites are not in stock!

Missile with a view

There's a wide variety of opposition to fire weapons at, including several helicopters for some air-to-air combat. The outside views of these are most spectacular, especially when you switch from viewing a target to the view of a missile about to hit it. The view quickly, but smoothly, tracks from the target to the missile, turns 180 degrees and follows the missile.

Two campaign areas are included – Central Europe and Persian Gulf. Four additional areas are planned, but you will have to



Press a key to Continue.
There's always some geezer playing a bugle at a military funeral. Even simulated ones.



Not sure of your best weapon against a target? Just pause the game to get a full game.



The copy protection and difficulty levels are all set from this one screen – compact and quick.

buy them separately. Needless to say, but the different terrain, targets and weather conditions do make for even more variety. Weather conditions also have an affect on weapons systems – laser-guided missiles like the Hellfire don't do nearly so well in fog or mist.

Playing from the four floppy disks rather than a hard disk (1.5Mb of memory is needed for hard disk use) is not too bad – loading time is quite long, but the disks are asked for in sequence. Playing from a hard disk is not exactly snappy, either.

In fact, the game takes hours and hours to play properly. It's not just lots of disk activity – quite a few missions in which you get killed have to be erased and replayed just to get a commission, let alone a full 99-mission combat tour before a pilot is retired.

Gunship 2000 has many hooks and lures, which makes it horribly addictive. I have literally played it for days and nights on end, and anticipate playing it for many, many more. It's that special – not perfect, but certainly a game you can lose yourself in for weeks at a time before you even begin to master it.

Pat McDonald 

Gunship 2000

£35.99

- Excellent graphics to fly around, through and over.
- Atmospheric missions, music and maps.
- Lots of depth to really get your teeth into.
- Realism options will suit flight sim buffs very well.
- More campaign areas are on the way, to prolong what is already a long term game.

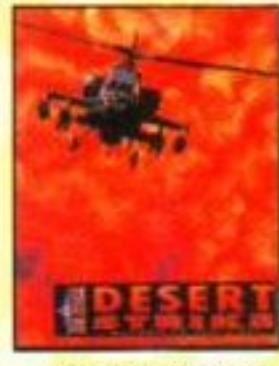


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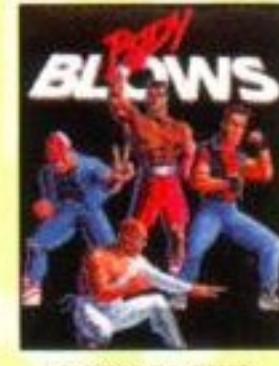
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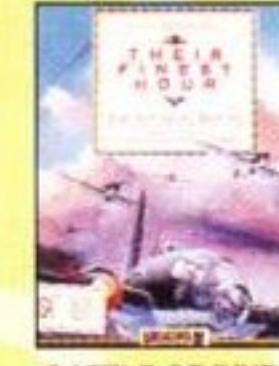
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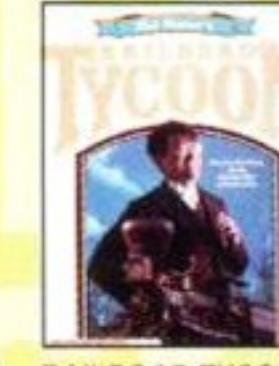
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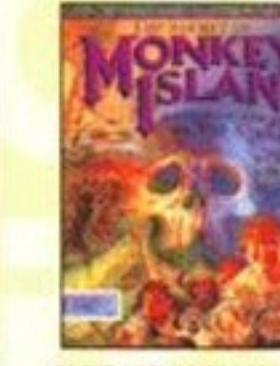
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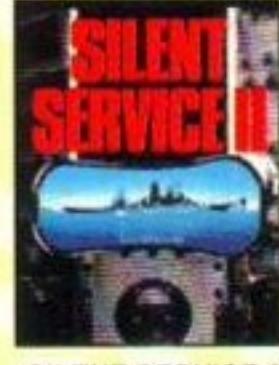
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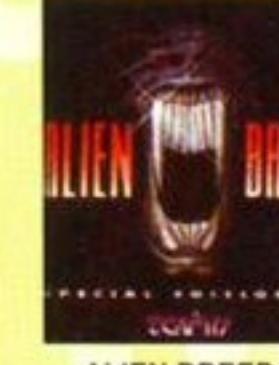
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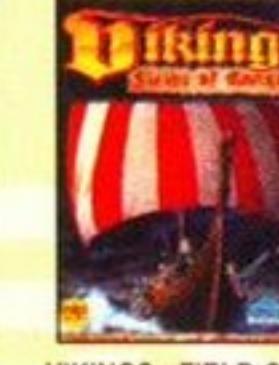
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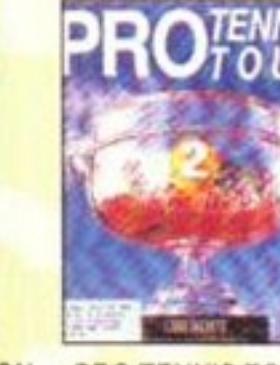
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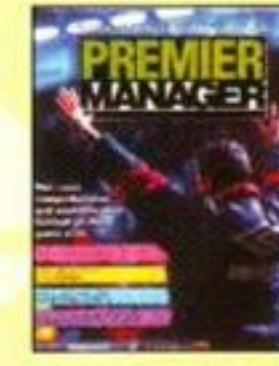
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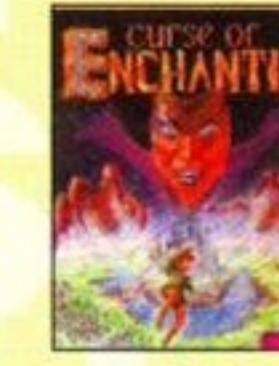
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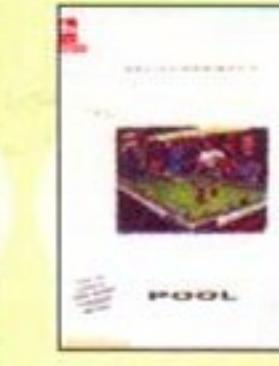
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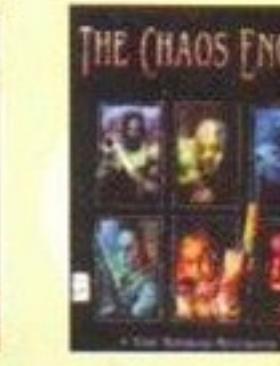
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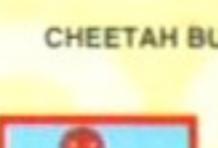
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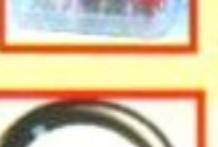
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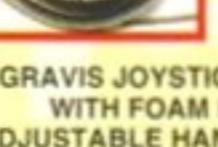
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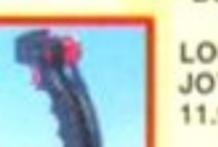
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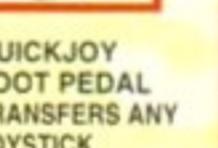
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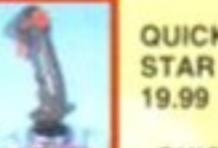
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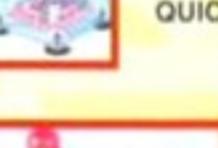
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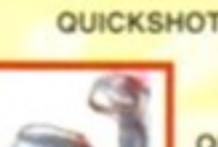
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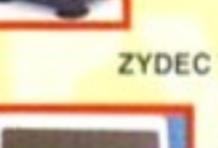
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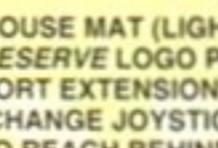
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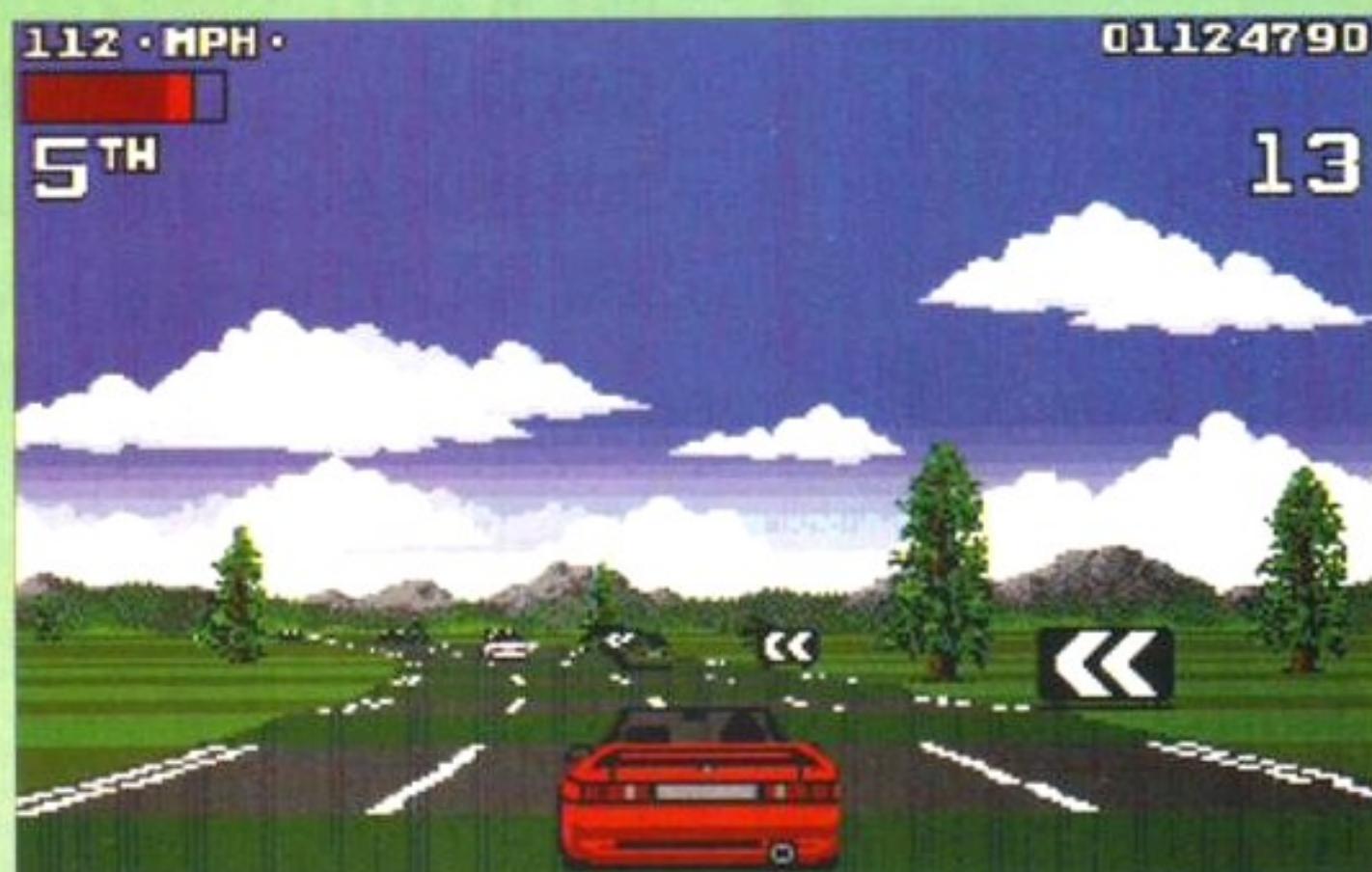
DRAGON MOUSE12.



"Never say no to a bargain," said our man **Steve Bradley** as he grabbed all the budget games and locked himself in the test room for days...

Lotus Turbo Challenge 2

GBH ■ £9.99 ■ Reviewed AF29 89%



"Live fast, die young, have a beautiful Porsche" so said James Dean - well something like that anyway. Unfortunately Jimmy never got to drive a Lotus Elan.

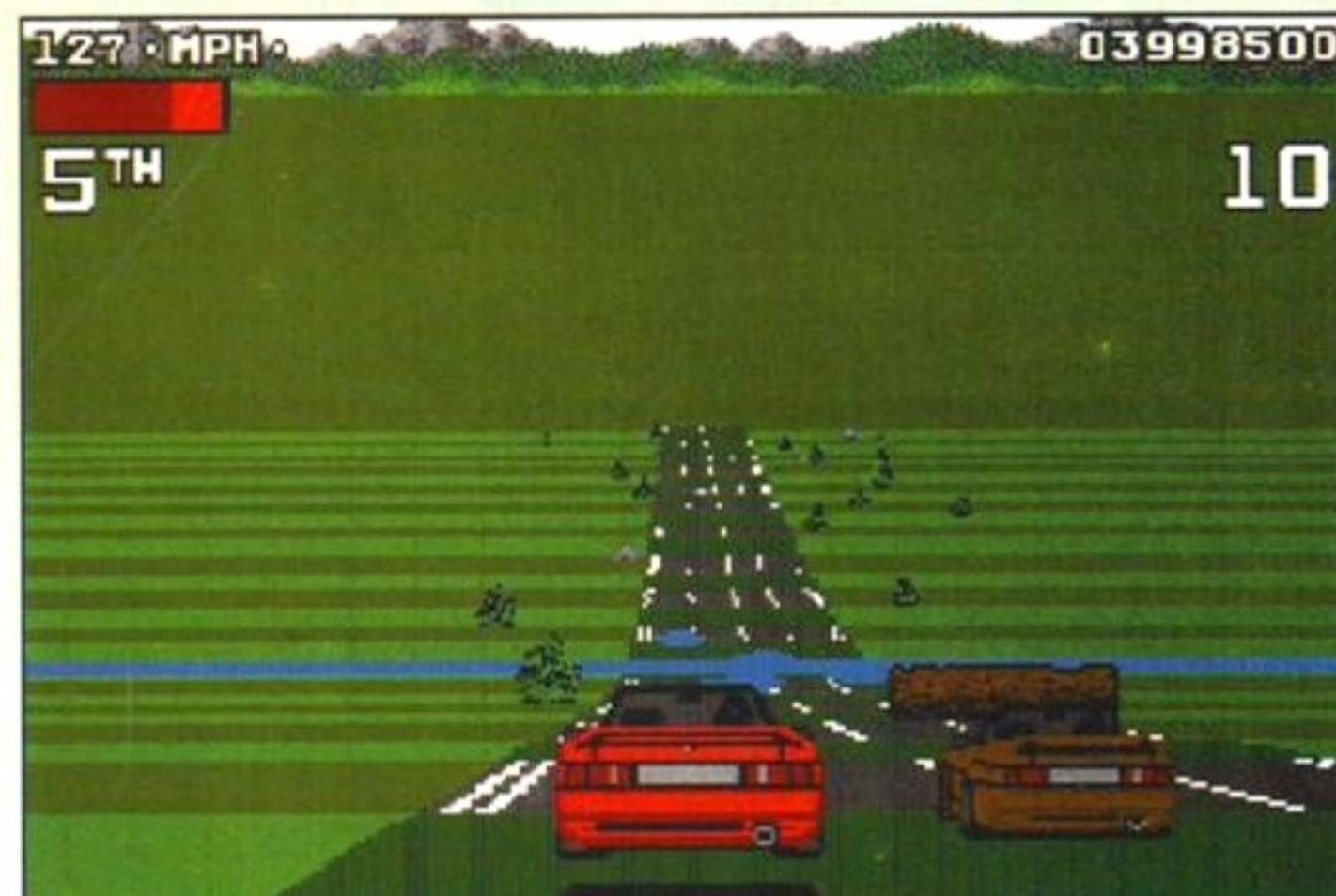
If I had a Lotus Elan, no way would I go anywhere near a racetrack. Still, this is a computer game so there's no point worrying eh? *Lotus 2* is a view-from-behind, against-the-clock race with eight different driving stages (and conditions) to contend with.

There are plenty of options here as well, including four player mode (by linking machines), the choice of manual or automatic gears, and acceleration by fire-button or joystick. The stages include forests, deserts along with various weather conditions, and each has a number of checkpoints to get through.

Winning the race is very much a case of foot down and go for it. Any dawdling and you will run out of time. *Lotus 2* is an excellent racing game and you're constantly spurred on to reach the next stage just to see what the conditions are. But as Ferris Bueller once said: "You killed the car" and unfortunately, you cannot kill the Elan in *Lotus 2*, no matter how many times you hit objects.



87%



"And in the lead is American folk singer Tracy Chapman, closely followed by Gary Numan and, oh dear, Adam Ant has just pulled out due to Car Trouble."

CONTACT NUMBERS

Kixx
GBH
Zeppelin

021-625 3311
0742 753423
091-385 7755

Hit Squad
Empire
Alternative Software

061-832 6633
081-343 7337
0977 797777

cheap 'n'

The Cycles

Hit Squad ■ £9.99 ■ Reviewed AF9 84%



I knew that Joey had the edge but that didn't stop me trying to ride my silver machine like the wind.

also gives you an idea of the track layout. Early doors, it's best to go for the 125cc bike rather than the 250cc or the four cylinder 500cc. I tried the 500cc first and spent a lot of time on grassy verges. If you're into racing games, *The Cycles* will certainly keep you going for a while. The main gripe is that you can't race against a friend, but it's a good buy for a tenner.



80%

My Mum used to warn me about the danger of riding motorcycles, although I used to have a Raleigh Chopper which was more dangerous. *The Cycles*, you will be pleased to know, is not in the least bit life threatening. There are 15 different circuits and to win the World Championship, you have to race the lot.

Before each race, you run a solo qualifying lap to determine your place on the grid and this

Murder!

Kixx ■ Reviewed AF14 81%



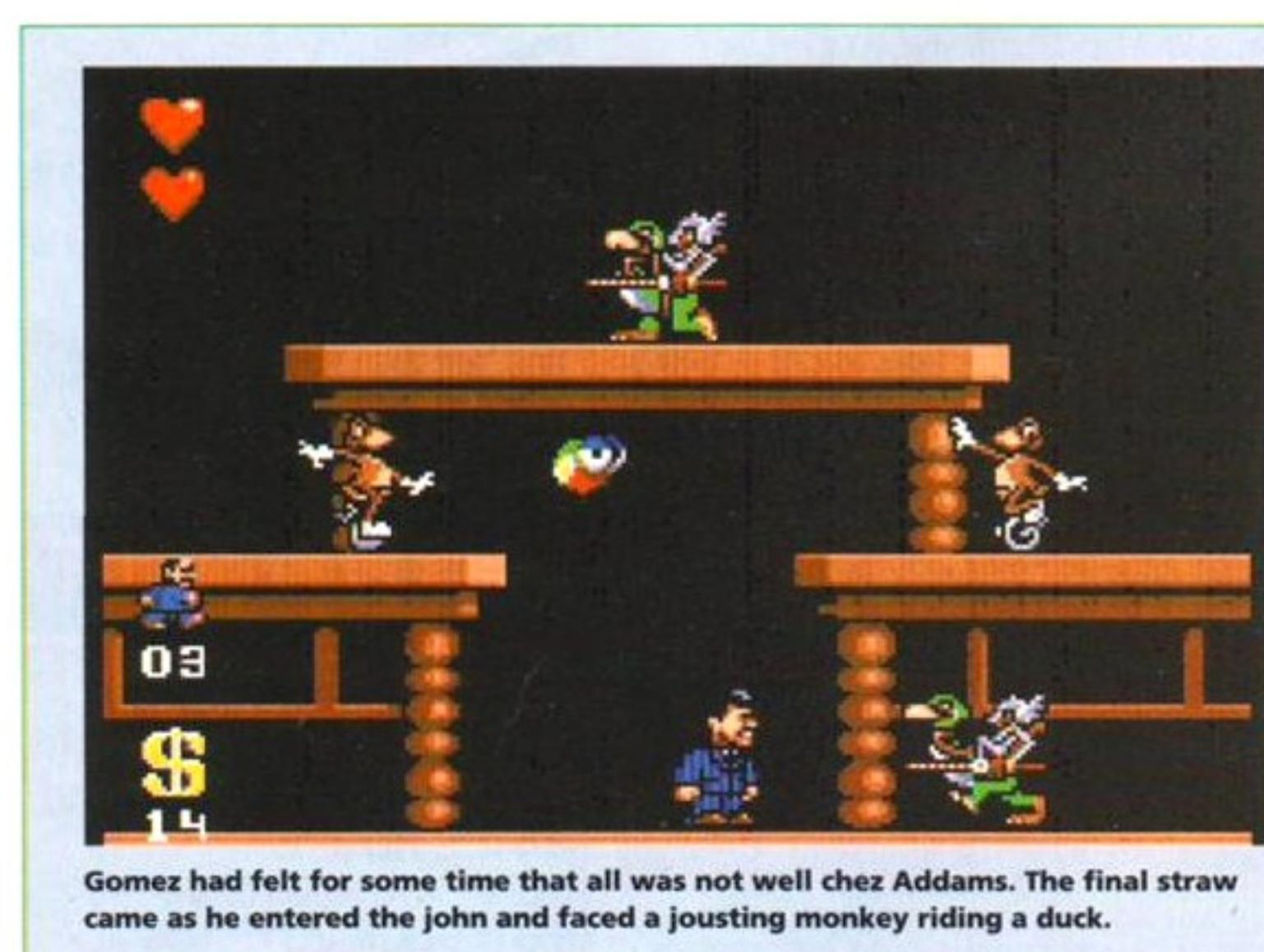
I knew Major Nigel, cunningly masquerading as Alexei Sayle, was guilty as sin.

almost three million murders, you get many a chance to prove that crime doesn't pay.

Have you ever watched that TV programme *Cluedo*? Well this isn't anything like it. Alright, it's a bit similar in that solving a murder is the name of the game. The action takes place in a mansion, with a rather splendid 3D isometric viewpoint of the old pile. You have to search the mansion for clues, question suspects, hunt for fingerprints and generally snoop around to find out what the butler saw. You get two hours to solve the crime and with



81%



Gomez had felt for some time that all was not well chez Addams. The final straw came as he entered the john and faced a jousting monkey riding a duck.

Cheerful

The Immortal

Hit Squad ■ £12.99 ■ Reviewed AF16 78%



Harry looked on impassively as the oversized Goblin took a sword to the man in the dress.

shoot out of skulls, and solve puzzles. The graphics are excellent and it's almost worth getting killed just to see the blood seep out of your body. There are seven levels to tackle and if you like adventures with a bit of action, you will like *The Immortal*.

Verdict 82%

Pinball Magic

Kixx ■ £9.99 ■ Reviewed AF8 75%



I like to think I am by far, the best pinball player at Amiga Format. But I'm not - yet.

enjoy the challenge of completing the levels and going for the jackpot bonus.

Verdict 79%

The Addams Family

Hit Squad ■ £9.99 ■ (Reviewed AF35 78%)

Odd looking bunch the Addams Family, and who is that hand fella? It would be nice to see this lot on *Family Fortunes*. Come to think of it, didn't they win *Telly Addicts* last year?

Anyway, *The Addams Family* is a licensed platformer from the film of the same name. Gomez (that's you that is) has to rescue members of his (Addams) family who have been captured by evil Abigail Craven, a woman anxious to lay her hands on the family fortune. Would you want to rescue Pugsley, Wednesday and Granny if they'd disappeared? This he must do by searching the mansion which consists of a veritable maze of rooms, as well as areas outside and underground.

You never quite know what to expect upon entering a room - flying teacups, animals on unicycles, tortoises riding sealions (the last one was a lie). There are helpful pick-ups to collect along the way including a fez which enables you to fly. Both the graphics and soundtrack are excellent and the playing area is so large, it will keep you going for ages.

Verdict 88%

Space Legend compilation Wing Commander

Empire ■ Reviewed AF44 83% ■ £29.99



"She's ne gonna take it Jim" cried Chewbacca as the crew from Blakes Seven landed at Shepperton.

graphic sequences and good narrative development, *Wing Commander* is an enjoyable Star Warsian (can I say that?) romp.



Not long after its full price release, *Wing Commander* finds itself on a compilation. This one's a mixture of flight sim and shoot-em-up with Saturday morning cartoon graphics to boot. With the alien Kilrathi race hellbent on causing mayhem, it's your job to get out there and blow 'em away. Whether you do depends on your tactical ability and accuracy with the bullet. With its nicely animated

MegaTraveller 1

Reviewed AF24 70%



Roger consumed his eighth pint of stout knowing full well Trudy's frenzied diatribe was lies, all lies.

team to do the business. It's not easy to get into and unfortunately the Space Legends manual is not particularly user-friendly. However, those with the patience of Job may find it rewarding.

Set 5,000 years in the future, *MegaTraveller* is a tale of warring factions - the evil Zhodani Consulate and the goodies, the Third Imperium. The Zhodani are preparing another attack, and the only way to stop them is to infiltrate computer records about the conspiracy and then apprehend their leader.

MegaTraveller is a role-playing game where you get to design the characteristics of your

Elite Plus

(Not previously reviewed)



"Cap'n, what's large, green and septagonal in shape?" "Oh Jenkins, not that old one again".

yourself in the skies (young man).

Graphically, *Elite Plus* is nothing special, but the gameplay is excellent with fine attention to detail.

The Space Legends compilation is very good value for 30 quid, particularly as *Wing Commander* was only recently released at full price a few months back.

You are the owner of a rather tasty Cobra Mk III spaceship which you collect from planet Lave. How you choose to use the ship is entirely up to you. The galaxy is your oyster. Some may wish to take the less dangerous course of the trader and defensive combateer, while others may prefer the glamorous but more risky route of the bounty hunter. Either way, you must be clued-up and this means canny trading and careful flying. And behave



91%



INDI LAUNCH NEW MULTI MEDIA CLUB

Indi have just launched "The Indi Multi media Club". Members will be offered a complete range of Amiga Software covering Professional, Games, Utilities, CDTV, and CD Audio and video and selected PD.

Membership costs £10 per annum with a free offer on joining. Members will then receive a monthly catalogue giving incredible discounts on all products listed.

RING 0543 419999 FOR MORE DETAILS

Performance Comparison

AMIGA
400/040

AMIGA
1200 with
M1230XA

AMIGA
400/030

AMIGA
1200

Performance Index



DMA ENSURES HIGHEST PRACTICE

As with most industries, the UK's personal computer industry has its share of cowboys operating in the mail order sector and at the receiving end a line up of despairing consumers who have suffered at their hands.

A personal computer is a sophisticated and expensive item and provided the purchaser is dealing with a reputable and accredited supplier, buying a computer by mail order can be a perfectly safe and cost effective exercise. The Direct Marketing Association (DMA) was set up in April 92 to set and maintain high standards for the sake of the industry and society at large, and to ensure that we can continue to regulate our own activities on the basis of proper professional responsibility.

Membership of the DMA is not conferred lightly - it is a privilege which entails responsibilities, to the consumer as well as to the industry. The foundation for this must be good practice. DMA members are required to abide by the highest standards as laid down in the DMA's code, enforced on members by The Authority of the DMA a separate body with an independent Chairman, and which is an assurance of vigorous self - regulation and professional responsibility.

DMA members also agree, as a condition of membership, to abide by The British Code of Advertising Practice and The British Code of Sales Promotion Practice: to apply the Mailing Preference Service file when appropriate: and to subscribe to the Advertising Standards Board of Finance (ASBOF) and to the Mailing Standards Levy as applicable.

The DMA symbol can only be used by members. Printed on stationary, advertising and other promotional material it demonstrates that these companies conform to the Association's high standards and are subject to the DMA's Code of Practice, thus enhancing the companies credibility with customers, suppliers and of greatest importance, the consumer.

Since the symbol was introduced last June, it has become synonymous with quality, professionalism and responsibility. While it cannot be shown in any way which will become a sign of best industry practice and of strict adherence to DMA codes of conduct. The symbol represents authority for members and reassurance for consumers. It has been a high valued mark of confidence signifying to the consumer the truly professional edge of the industry.

Alison Slan

Alison Slan
(Director of Public Relations, DMA)

INDI DIRECT MAIL

Proudly Presents THE JAKKI BRAMBLES COLUMN

Hi,

Commodore's decision to reduce the price of the Amiga 600 took everyone by surprise and really positions the A600 as the perfect entry level computer.

Of course the problem with new technology is that something has to be left behind and in Commodore's case it's the poor old 500.

Now Indi tell me that Commodore are taking back all old A500's when you buy a new state of the art Amiga 1200. So dust off that old A500 make sure that it is in full working order and you still have the mouse, modulator, manuals and power pack. Give Indi a call on 0543 419999 and ask for "Amiga 500 Trade in Desk", Indi will send Securicor to your home and pick up your A500 at their cost and then deliver a superb new Amiga 1200 with £100 off the advertised price. Remember this is a limited offer. What's a PCMCIA slot I ask? Indi explained to me that its Commodore's way of ensuring that both the Amiga 600 and 1200 can remain future proof. Credit card style memory cards are already available from Indi but that's just the beginning, faxes, modems and network cards are on their way and who knows what else. If you need to know more about PCMCIA why not drop me a line.

On the subject of letters I have been swamped. It's absolutely great and I promise each one will be responded to and get a signed photograph so keep them coming! Last month's winning letter came from **Adrian Simpson of County Down** Northern Ireland who gave a very well informed comparison between Amiga and less useful consoles.

I was absolutely knocked out with all the details he sent me concerning the music capabilities of the Amiga. Adrian's letter was far too detailed to reprint but a big thank you to him for writing it. Adrian the prize is on its way.

WHAT DOES THIS SYMBOL MEAN



Finally I received a few important letters asking what is the DMA and why is it important to consumers that Indi is part of it. On this page you will find a letter from the Chairman of the DMA, it's well worth a read.

Jakki Brambles



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AMIGA A1200



OFFICIAL A1200 HD SYSTEMS
 The Amiga 1200 supplied by Indi Direct Mail now includes the official (legal) Commodore installation disk and hard drive utility manual. Indi are proud to be an official supplier of Amiga 1200 Hard Drive systems, that include the official software, documentation and on-site warranty.

A500 TRADE IN!!
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60 / 80 Hard Disk upgrades available on any A1200. Upgrade includes full Wang warranty on A1200 and Hard Disks. Phone for a quote.

AMIGA A4000



It's here - The new Amiga 4000/030

The NEW Amiga 4000/030 features a EC68030 processor running at an incredible 25Mhz, and upgradable at a later date to a faster processor. The 4000/030 has a powerful 4 Mb of 32-bit RAM (2Mb chip & 2 Mb fast) expandable to 18 Mb using industry standard 32-bit Simms module. In line with the Amiga Flagship 4000/040 the 4000/030 features the new AGA graphics chipset, giving you a massive palette of 16.8 million colours. A range of hard drive options are available from 80 - 240 Mb and includes a SCSI option.

4000/030 80 Mb HD INDI PRICE £939.99

Other Drive Options

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1940 Monitor £279.99

14 inch screen size - 0.39 mm dot matrix

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1942 Monitor £379.99

14 inch screen size - 0.28 mm dot matrix



Parnet Adaptor for CDTV

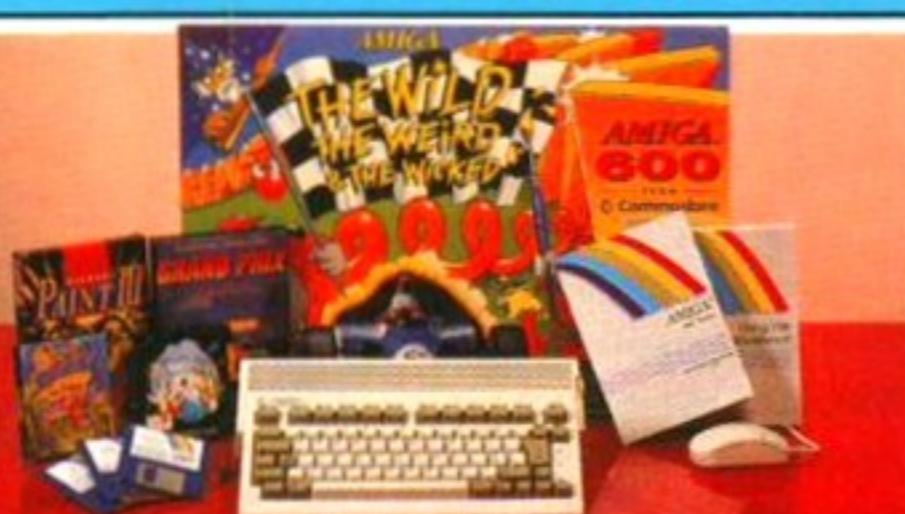
Connect a CDTV player to any Amiga, and access the world of CD-ROM software. The Parnet interface and software will allow the Amiga CDTV to be used as a CD-ROM drive with any Amiga and will give any Amiga owner access to the vast range of CDTV software currently available.

The CDTV player offers excellent value for money when compared with a standard CD-ROM drive and interface. Most CD-ROM drives will set you back over £400 while CDTV will cost you less than £300 and will play audio CD's in addition to CD-ROM / CDTV disks your Amiga, interface cable and PD disk with driver software for your CDTV player.

INDI PRICE £39.99

A4000/030 PLUS CDTV + 1960 MONITOR.
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CDTV + PARNET.
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AMIGA A600 PRICE CRASH



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PACK CONTAINS:

- * A600 Single Drive
- * Built in TV Modulator
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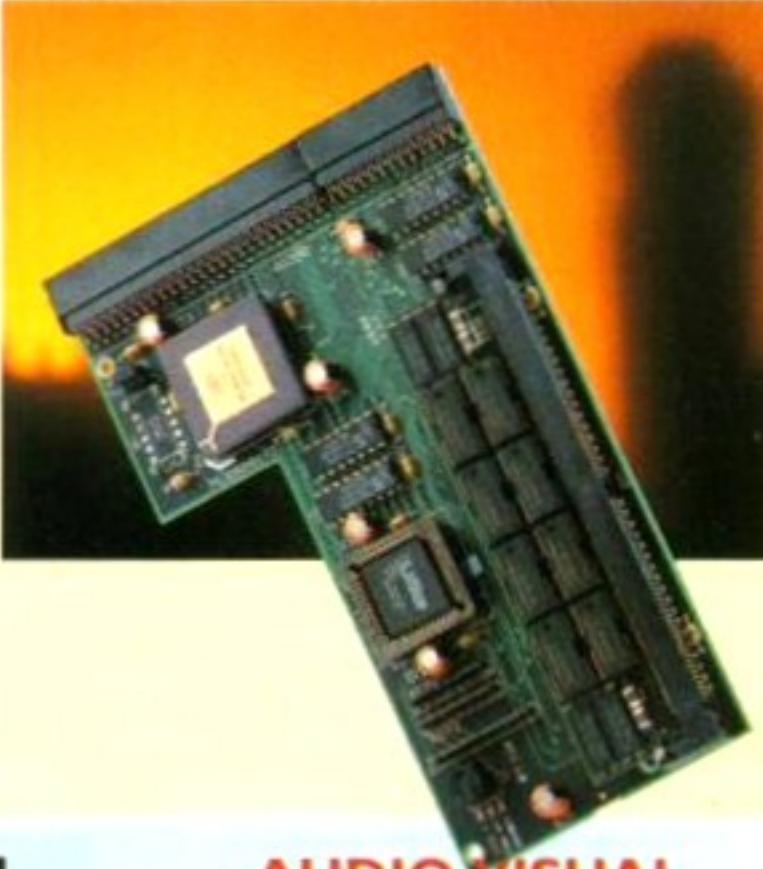


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NEW FROM MICROBOTICS!!! M1230XA ACCELERATOR LAUNCH!!

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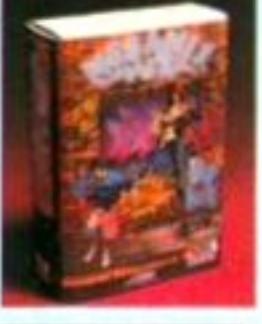
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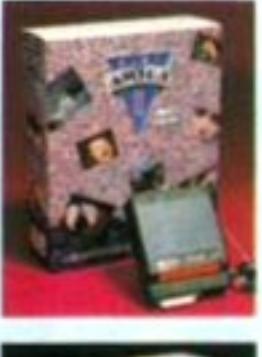
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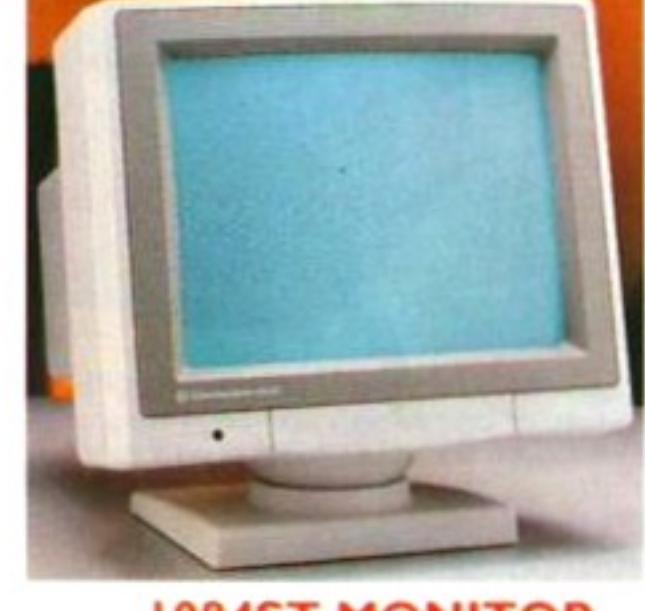
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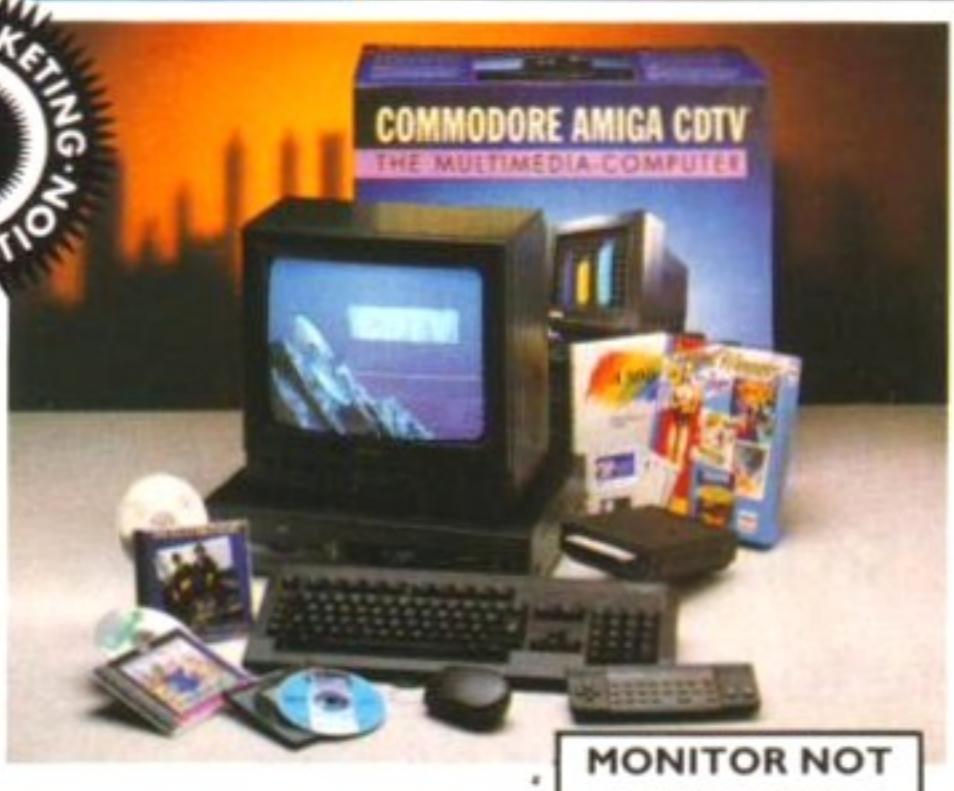
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If you are thinking of buying CDTV or already own one you'll be pleased to know that INDI stock all CDTV accessories and software that are available from manufacturers. We believe in CDTV and we therefore continue to support this exciting product. You will always have a source of product for your CDTV from INDI.

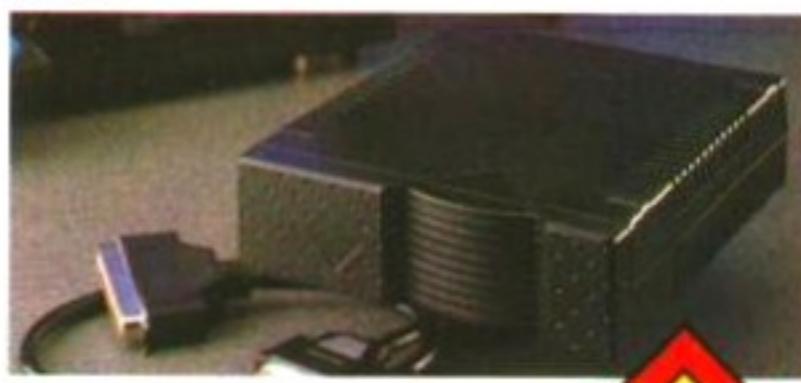
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Chart busters

Desert Strike

Reviewed AF46 - 87%

Electronic Arts ■ 0753 549442



OK, you've bought this game from Electronic Arts, but it's a little difficult. Here's an easy way out courtesy of Simon Green of St Albans (drawn out of a hat containing hundreds of similar entries we received!). Go to the Access Code screen, and enter TQQQLOM for five lives, or BQQQAEZ for 10 lives. Now either begin the first mission, or go straight back to the Access Code screen

and type in one of the following codes to skip to other levels:

Note: the password system records the current level of ammunition, fuel and so on. The passwords should give you enough provisions to get through the chosen level.

LEVEL CODES:

CAMPAIGN	TITLE	CODE
2	Scud Buster	LQJAQRJ
3	Embassy City	TLJJOAQ
4	Nuclear Storm	JTEKOMK

Graham Gooch Cricket

Reviewed AF47 - 78%

Audiogenic ■ 081-424 2244

Some hints for you directly from Audiogenic...

- Don't always bowl at the fastest possible speed; a slower ball may fool the batsman.
- If you've never seen it rain, check out the name of the main file on the program disk. It should be something like: '130593.AG' - if you've got an earlier date, return your disk to Audiogenic for a free update.
- Right-handed computer batsmen seem to be weaker on the off-side.
- The straight-drive can be the most effective stroke, but make sure you don't edge the ball to the slips.
- Don't forget to vary the position of the wicket-keeper to suit the speed of the bowler.
- Connect your Amiga to your VCR and you can create your own Action Replays. You could even leave the game running in computer vs computer mode when you go out, then rewind the tape to see the highlights.

Championship Manager '93

Reviewed AF46 - 87%

Electronic Arts ■ 0753 549442

Some handy hints from Oliver Collier of Intelek...

MATCH TACTICS:

- A strong midfield is essential - look at match stats screen to see how midfield is faring.
- Try to adjust formation to combat your opponents.
- Don't ask your player to play a too advanced style of football.

TRANSFER MARKET

- When in lower divisions, look for bargains. Experience is very useful. Don't spend all your cash on one player, buy several older players to get you out of the division.
- Don't base everything on a player's history. He may have had bad seasons due to injury or playing in a poor team.
- Try to keep your players under contract. The longer a contract is, the more he is worth.
- Use the scout reports. Pay attention to the last five ratings.
- Player loans. Don't rely too heavily on loaned players, because they won't be able to play in cup competitions.

PRE-SEASON

- Even if you think you know your best team, try as many players as possible in pre-season. Arrange friendlies against mixed oppositions, so you know the team's weaknesses.

INJURIES

- Insure your best players against injuries, and rehabilitate them when they face a long lay-off.

GameB

Love 'em or hate 'em, there's nothing worse than being stuck on them. So luckily kind people like **Andy Nuttal** are here to help you through those parts of a game you can't normally reach...

Sink or Swim

Reviewed AF47 - 73%

Zeppelin ■ 091-385 7755

Here are all the level codes for Zeppelin's cute aquatic puzzler:

2	BISHOPSMOVE	18	ARNIESMUM	43	JIMBOBSFEET
3	PATSY4KERMIT	19	LOGOPOLIS	44	JAKOVONLUNA7
4	HOWNOWPOWWOW	20	DOCTORWHO	45	CHUCKYCHEEKS
5	RINGWORLD	21	MRJONESPUPPY	46	LINFORDSHOUR
6	TROUGHTON	22	HYPERSPACE	47	WONDERSTUFF
7	REDPLANET	23	ROBERTSMITH	48	WITCHINGHOUR
8	MEGALITHIC	24	WHOWHYWHEN	49	ANEWMACHINE
9	MYBREAKFAST	25	SOCKATTACK	50	GENERALALERT
10	TINNYBOPPERS	26	WELLNEVER	51	UNBEARABLE
11	LOCKSALORDY	27	MRPOTATOMAN	52	HAVEYOUGOTIT
12	HALLOWEENVII	28	JOSIEWHALES	53	KILLERFISH
13	NEWMODELARMY	29	SOBRIETYCITY	54	THEHOLYGRAIL
14	TIMEPIECE	30	WHERESMEEBEER	55	BADBADKARMA
15	LARRYNIVEN	31	HORSEFACE	56	RUTHERFORD
16	KILLERWHALE	32	GINASDINER	57	WIZZBANGPLOP
17	BLUEHORIZON	33	CHICKENFEED	58	SKYSTHELIMIT
		34	CARROTCAKE	59	NEXTPASSWORD
		35	STRENGTH	60	FIELDSOFDOOM
		36	NEEDLEMATCH		Thanks for these codes
		37	YUMCHOCDROPS		goes out to Thomas
		38	RADION90210		Jenkinson of Barnsley,
		39	MISTLETOE		who wins a copy of
		40	INDIANAJONES		Psygnosis' cunning
		41	AUNTIEJILLY		puzzle/platformer
		42	BEVERLYHILLS		Lemmings 2 for his effort.

WALKER

Reviewed AF46, 81%

Psygnosis ■ 051-709 5755



Walkers have a problem with overheating - a bit like Y reg Maestros really.

To counter the gun's habit of overheating while you are under attack, connect an autofire joystick to the Amiga's second joystick port. Switch the autofire on, and (assuming the autofire is roughly the same rate as the Zipstick's) the guns will practically never overheat. They will fire a little slower than they normally do, however, but at least they are constant.

Stelios Kalogreades
Limassol, Cyprus

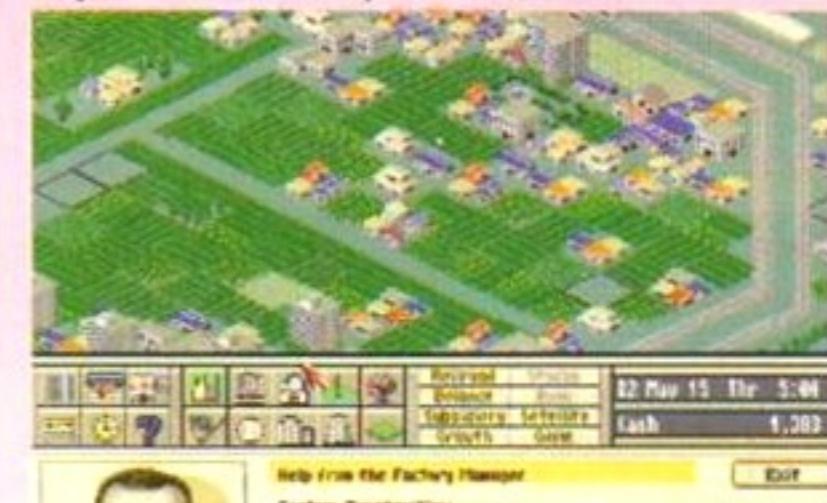
WINNING TIP!

A-Train

Reviewed AF45 - 84%

Ocean ■ 061-832 6633

Finding the going a little difficult? Leaves on the line? Try these handy hints...



These tips should help you get maximum efficiency from your railway.

One trick is to build a non-destination train, along with a station and track. The idea is the train leaves the station and travels one block before returning. Although no ticket revenue is made, the station registers many passengers. The operating loss may be more than offset by the benefits of increased

GameBusters

WIN A GAME FROM PSYGNOSIS!



The people behind such great games as *Lemmings* and *Shadow of the Beast* – Psygnosis – are now sponsoring GameBusters. This means that if you send in a tip you have the chance of winning any Psygnosis game. And if you don't want a game you can choose an AF mail order voucher instead. So send in those tips, maps and cheats and state which game you would like.

Humans – Jurassic Levels

Reviewed AF47 – 72%, Mirage ■ 0260 299909

01 DARWIN	19 LEOPARD
02 DOOM	20 ALAN B STARD
03 SPYDER	21 DANNEEE
04 480	22 LOOWEEZ
05 BILLS	23 KATIEWOOH
06 BROKE AGAIN	24 RADCLIFFE
07 OUR SHELF	25 IDONTLIKEBRAWN
08 NO SUPPORT	26 GILL NGEDS
09 MR PARROT	27 HOW MUCH
10 7 MILE WALK	28 THE SLOBS
11 BLIZARD	29 MRS T
12 MINI EGGS	30 ALMANBURIE
13 KEEF	31 GALLOWS FIELD
14 WORLDFOUROWN	32 PLAGUE PIT
15 ITS TOSH	33 CANDLESTICKS
16 BESTEST BUDS	34 BROWN SUGAR
17 00 CHILDREN	35 BABBLE
18 BLUE STUFF	36 BLATHER

37 TRADER	59 JUST TAKE 5
38 SCARY MAN	60 HAVE A BREAK
39 BOILED EGGS	61 3 NEGATIVES
40 NEED MORE	62 GIMME SHELTER
41 TURBO NUTTER	63 BLOAT ON
42 ITD BE OKAY	64 STAGGER HOME
43 IF THE FIRST	65 I LOVE ME
44 LOT HADNT BEEN	66 WHO DYUO LOVE
45 PUBLISHED	67 AAAAARGH
46 POUCH	68 SOS
47 WHINGEING	69 LUCIFERS CHILD
48 SAD BOYS	70 PYTHON LEE
49 CRAMP	71 QUANTUM LEAP
50 GLUM	72 SISTER BLUE
51 HASSLED	73 ARIES
52 GOLD LABEL	74 TAURUS
53 POULTRY GOOSE	75 FATEANDFORTUNE
54 KATE4LOUISE0	76 DOES IT MATTER
55 DRAKEER	77 WHAT WE PUT
56 SOURFACE	78 THIS IS IT
57 LURCH	79 SEE YA
58 ENDOSCOPY	80 FOREVER

growth around the station from the passengers. Try clicking on the stadium once it has been built, you should see a message appear – it makes an amusing reading!

- Here are a few interesting dates for special events that occur during the game:
- Feb 29 – leap year (every four years).
- April 5 & 6 – birds migrate north.
- July 7 – a UFO flies from the north east to the south.
- All Saturdays in August – Amusement park firework show (8pm).
- October 1 or 2 – Birds migrate south.
- December 23/24 – Santa rides his sledge from north to south (10pm-1am).

The crossroads are a powerful development tool, they create a strong subsidiary growth around them. Also speed up growth by clearing land with trees on it, and then reselling, because this increases the rate at which houses are built around your station.

Build factories in line one behind, or one in front, of the other for maximum efficiency. Stock markets can be predicted and once every 1-2 years there is a boom in which prices skyrocket, before falling back down.

Stuart Hawes from Norfolk wins a copy of *Lemmings 2* for these tips.

LIONHEART

Reviewed AF45 87%
Thalion ■ 021-442 2050



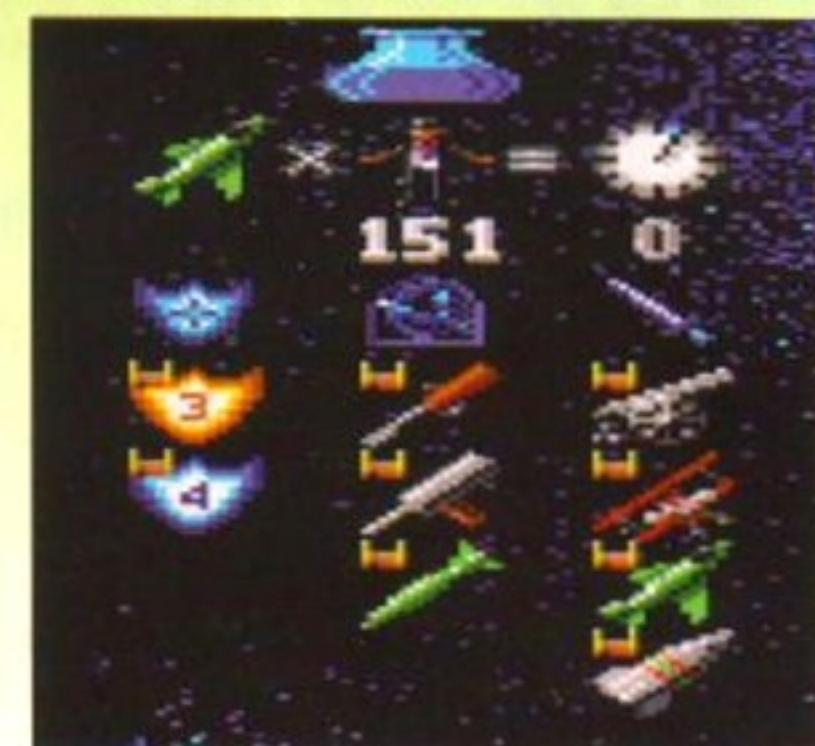
If you want to know a secret then read this tip and promise not to tell.

As well as the secret rooms mentioned in AF47, there is also this one: On level one, as you climb the big tree (before the hole in the tree at the end of the level) try dropping down the gap while keeping your joystick to the right. You will find yourself in another room containing nine crystals and a power-up. When you've collected them all, jump up to the tree again, and leave the level.

Warren Kershaw
Rochdale

MEGA-LO-MANIA

Reviewed AF26 – 91% Sensible Software ■ 0354 51934



It's an oldie but a goodie, and now you can enjoy it in its entirety on an A1200.

If anyone has recently splashed out on an A1200, and you have found that *Mega-Lo-Mania* won't work properly, turn the speech off before you run the game. You should now find that the game will run perfectly (but without speech, obviously!).

James Wright
St Albans

BEAVERS

Reviewed AF47 – 75%
Grandslam ■ 081-680 7044



A platform game with beavers as the central characters. Yes, beavers.

While playing, type BIGGIGBIB, then press F2 to skip up a level. Pressing the spacebar enables you to jaunt Jethro anywhere in the level – also, try holding the joystick button down to move more quickly.

LETHAL WEAPON

Reviewed AF43 – 64%
Ocean ■ 061-832 6633



Lethal Weapon – it's an OK game, and this tip will brighten it up some what.

you'll notice there's a lady standing next to them.

Stand on them, then jump on to the noticeboard which is on the other side of the lady. Move along until you are beneath the light, and just under the desk on the next floor, then push up. You will now be transported to a secret room. Here you will find a monster guarding four lives – simply jump over him to collect them. Now go through the door, and begin mission one!

Hold down the following keys for some excellent cheats:

KEYS

Alt, y and I
Alt, y and f
Alt, y and j
Alt, y and m
Alt, y and n

EFFECT

Extra life
Go flying
Invincibility
Fly with no baddies
Turn off the cheats

Abandoned Places 2

Reviewed AF45 – 87%
ICE ■ 0453 756 993

IF YOU HAVE played *AP2* using last month's tips, you may have discovered in Dwarven Mines 7 that you couldn't locate switch S3. This is because there is another switch, called S5, at location 17,5. Switch this before you switch S2, and all will be revealed.

Dwarven Mines 8



Make your way through the fire to T1 (11,14) (beginning with 0,0 as the top-left corner) which will teleport you to TD1 (22,1). Move to (2,19) and drop a torch in the fire next to you. A wall in front of you will disappear allowing you to get to dungeon 10.

Dwarven Mines 9

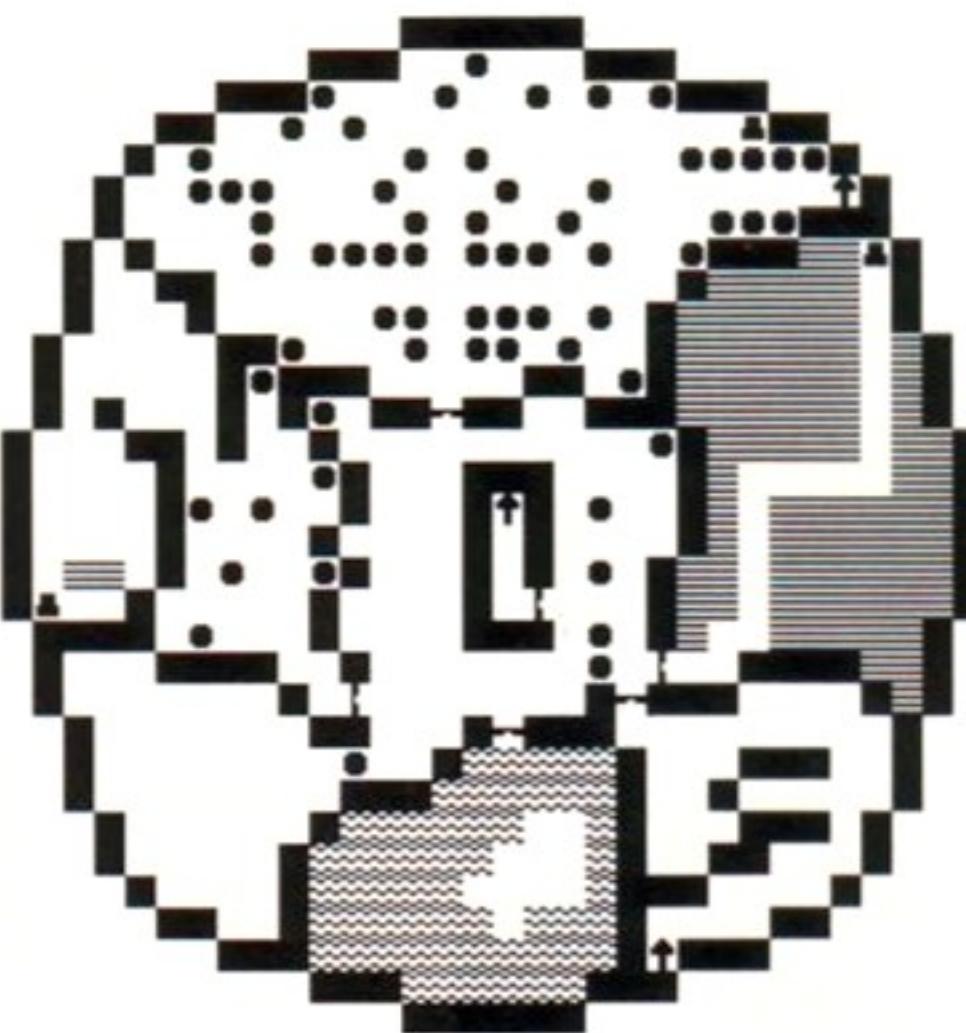


Go to the pit at (5,11) which takes you to (5,13). Go T1 (12,28) which takes you to (24,30). Go to T2 (30,1) which takes you to (1,1). Use S1 (22,6) which reveals a pressure pad. Walk on the pads until you see some monsters which give you a key when they are killed. Go to T3 which will take you back to the stairs.

Open the door in front of you, and get the shield at (24,12). Now go back up to the outside world (this enables you to visit shops and explore new dungeons, use City Exit icons to leave the city).

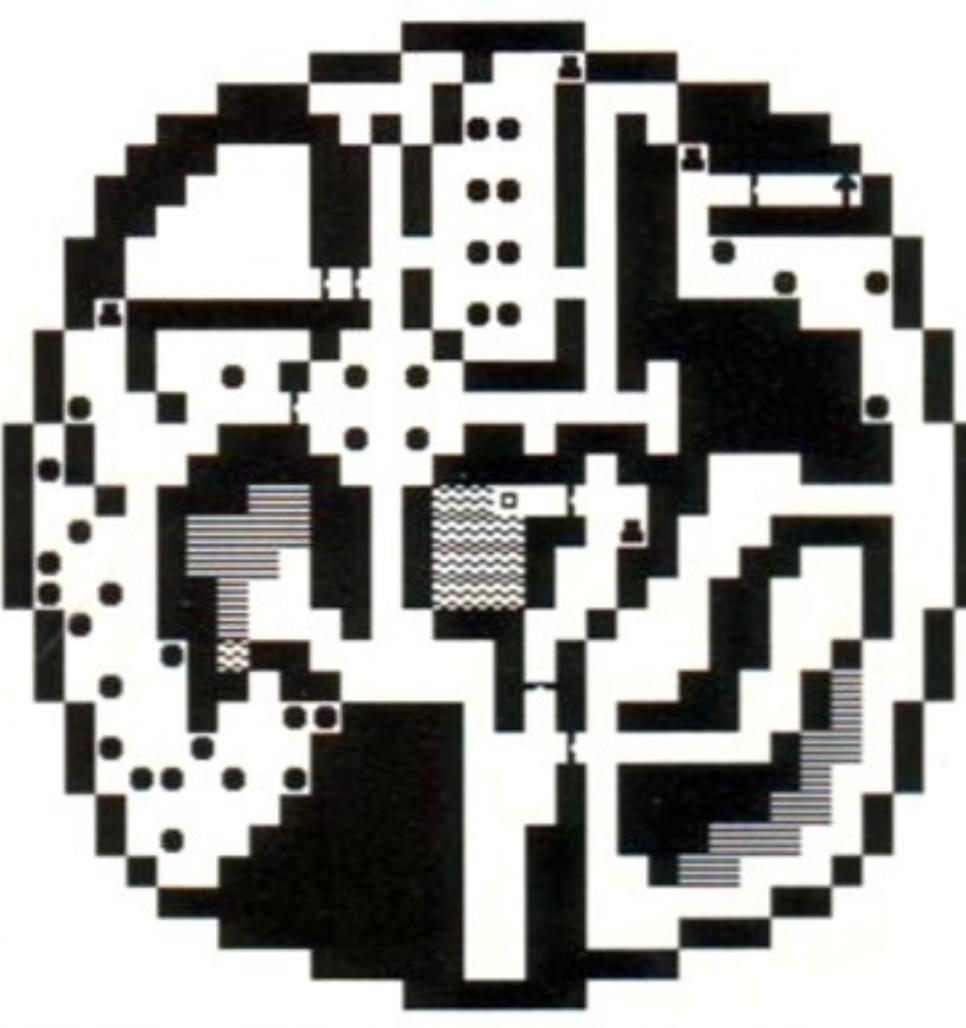
Continuing our maps for this RPG here are **ICE** to help you on your travels, starting where we left you – stranded at the end of Dwarven Mines 7...

The Tower Level 1



Make your way to (23,20) and face south. Use the hidden switch on the wall in front of you. This removes the pillar at (10,12) enabling you to access switch S2. This opens the door at (14,12) so that you can enter the north room. Collect the objects in the chest, and go to level 2 via the stairs.

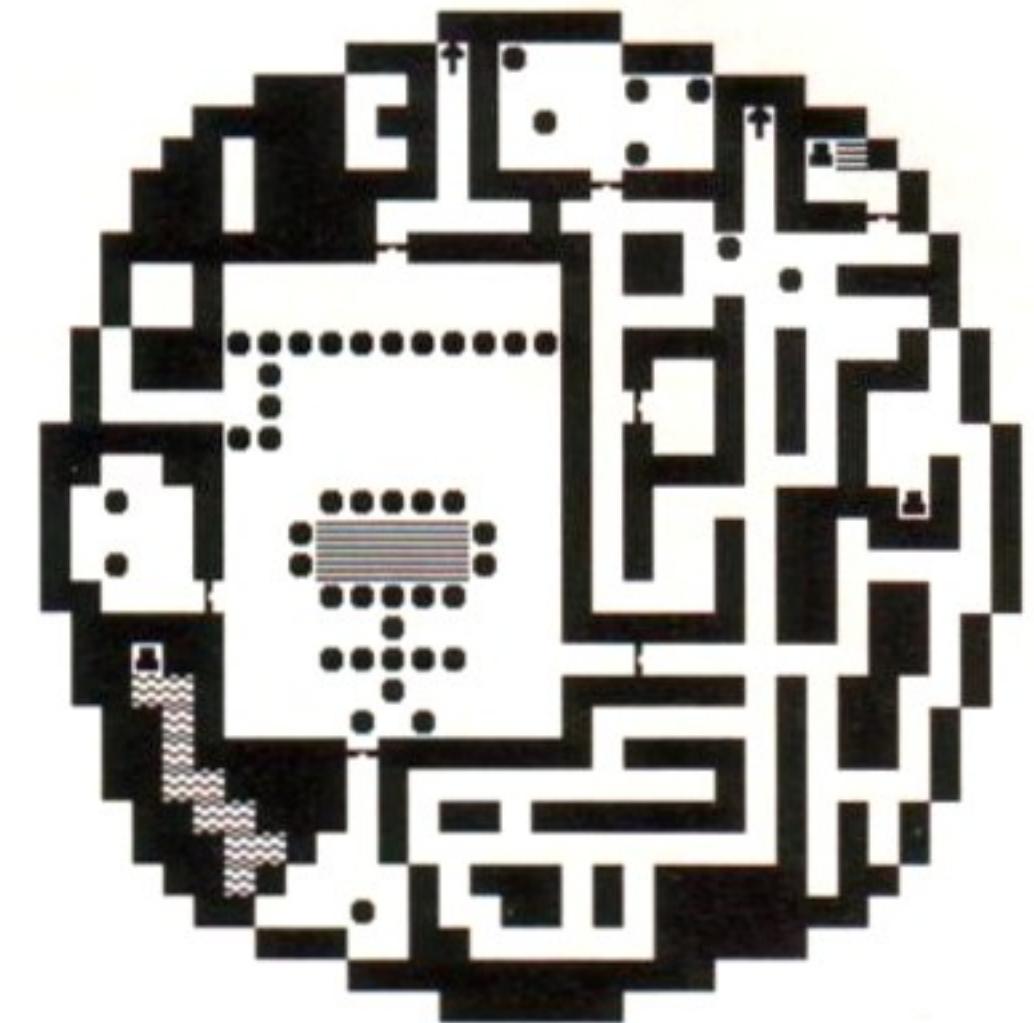
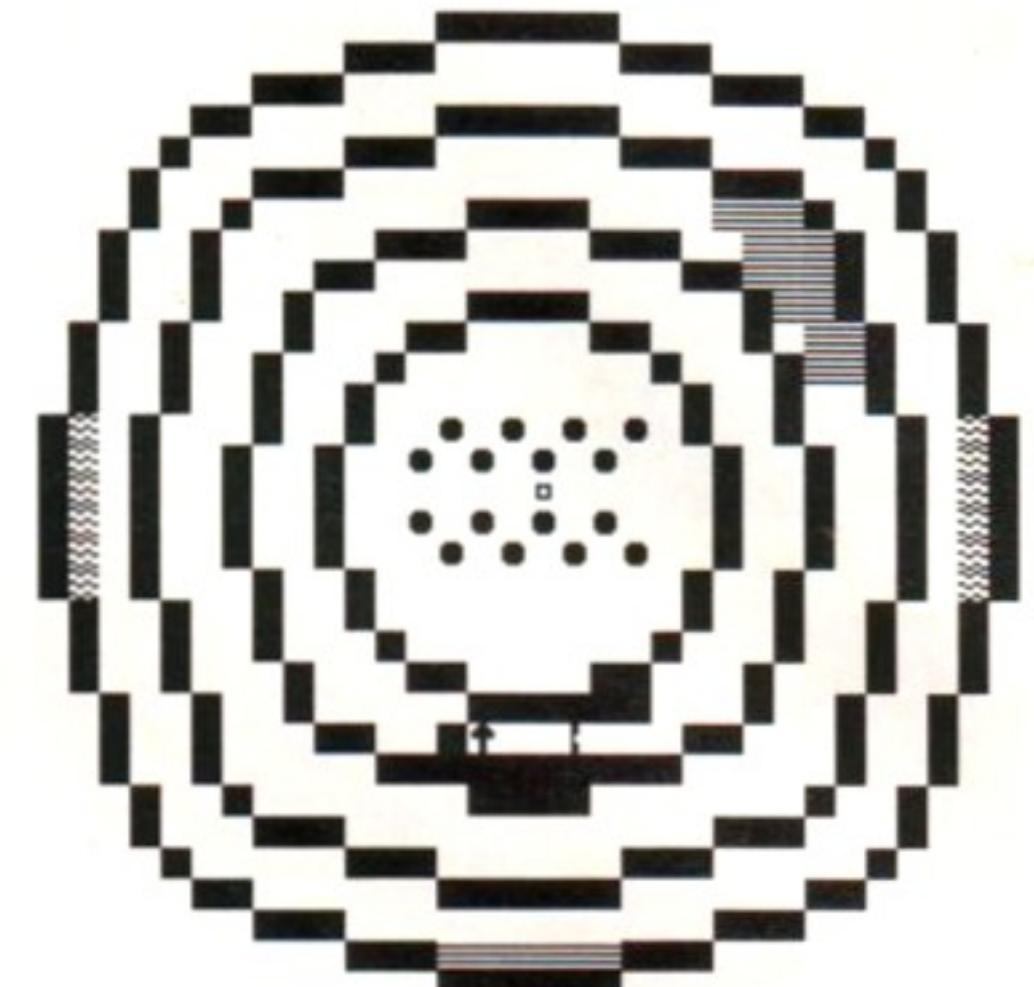
The Tower Level 2



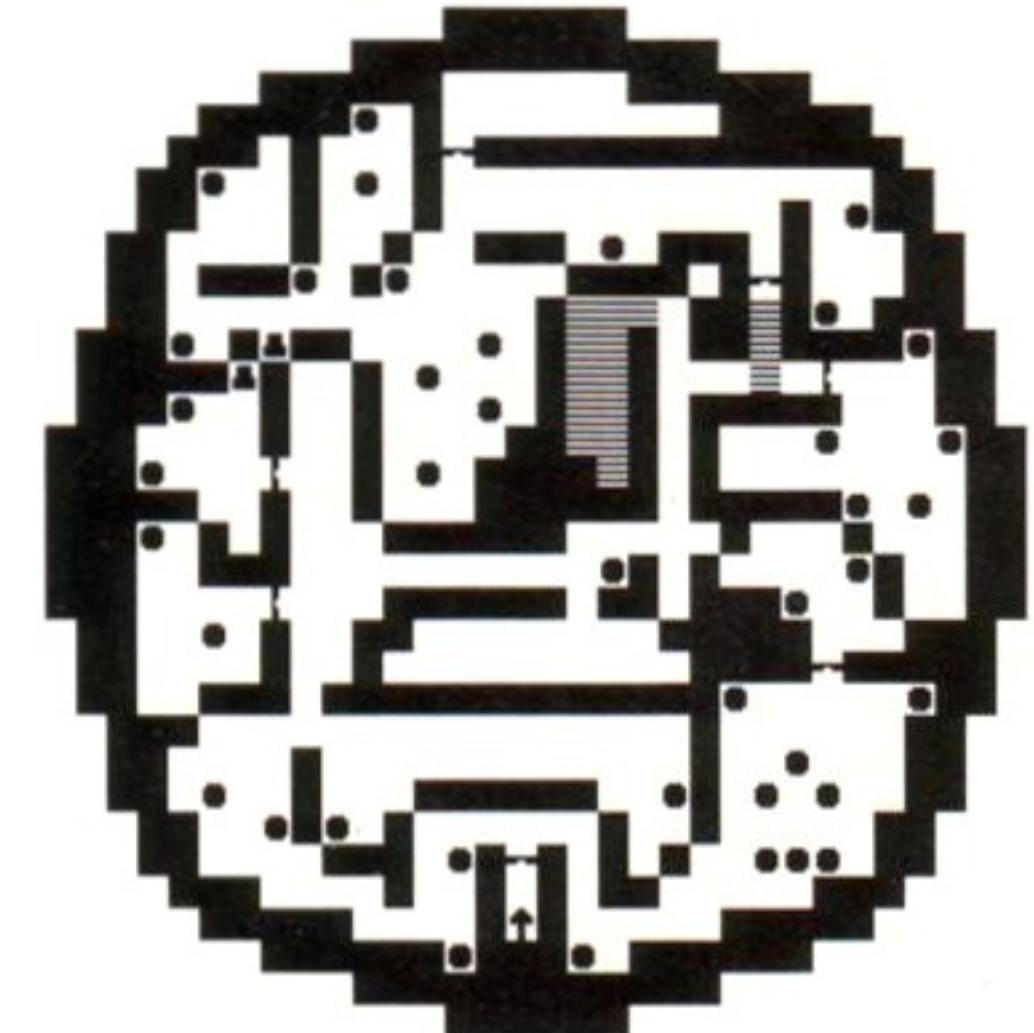
Open the locked door by using the magic sapphire. Find three more magic sapphires which open the doors leading to the pit at (16,15). Use the pit to go to level 3.

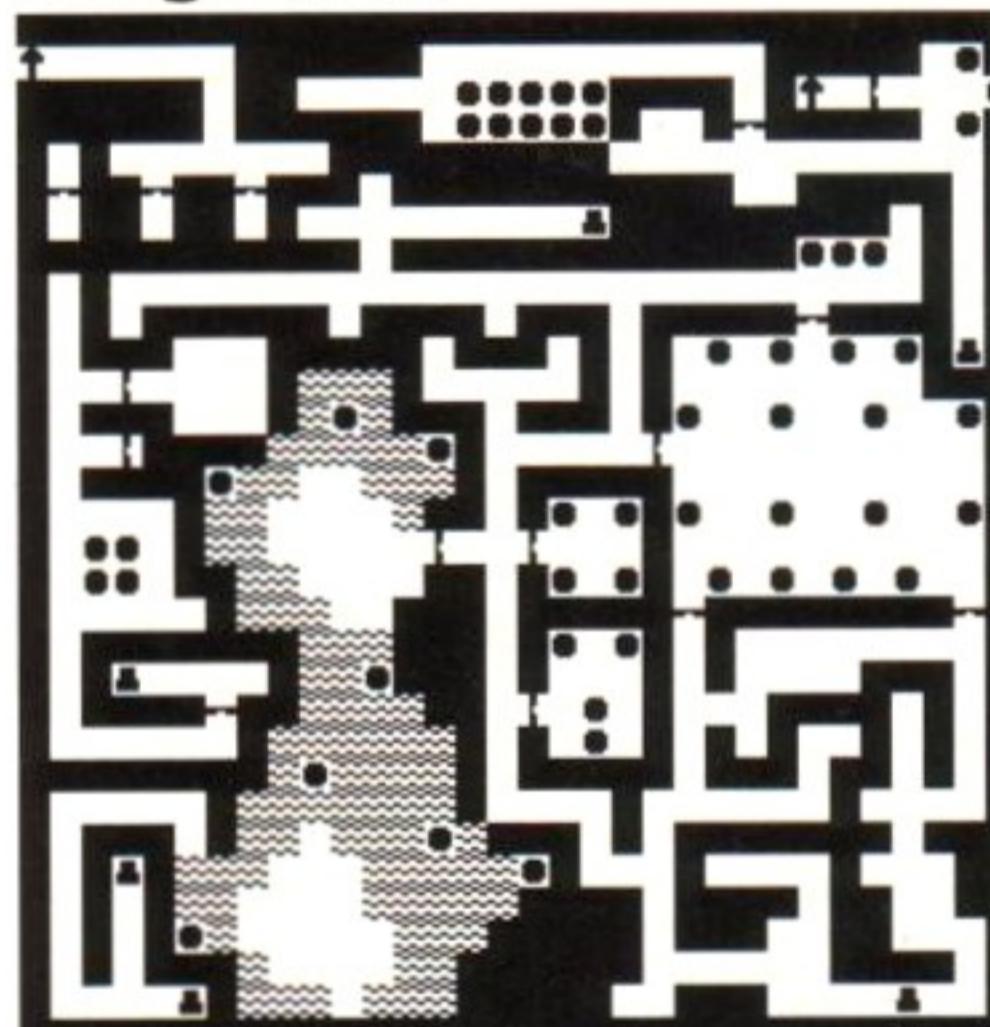
The Tower Levels 3, 4 & 5

Kill the monsters and find the key at (11,19). Walk through the illusionary wall to the south, then make your way to (20,23) and levitate over a teleport T1. Open the door with the key, then go downstairs to level 4. The switches at (14,6) open the door and passage at (12,2). Levitate over the first row of switches, and use the ones at (10,9) and (12,9) which remove an object at (6,10). Cast a spell down the corridor at (2,10) to remove the object at (7,11) and go into the main room. A key is in the fire at (9,16) which opens the door at



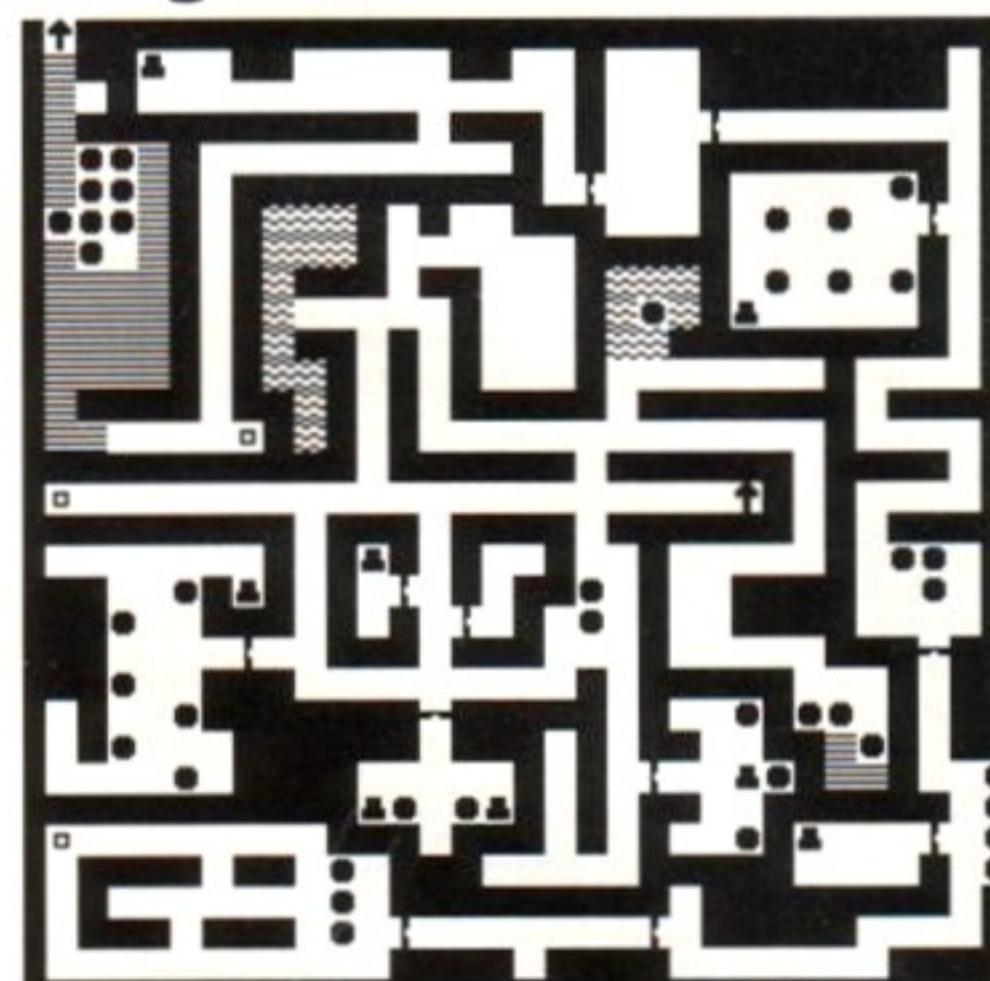
(19,20) providing access to the stair leading to Dungeon 16. This level doesn't need completing, but contains useful items. It is reached via the southern stairs in Tower Level 1. You need to place items on the pressure pad at (23,10) to open the door. If you fail, the door will shut leaving you trapped.



Dungeon 16

Use the switches near to the start to open the various doors and walls in this section. Use T4 (1,6) to get to TD4 (3,9).

Go to (20,28), and use a true-seeing spell to reveal the illusionary passage. Kill the monsters in the passage to get the key. Now go to (28,6) and use the teleport to get back to the start. Use T1 (7,6) which takes you to (9,2). Use the key on the door (23,3). Press S2 (21,3) which enables you to get the key at (17,2) and then go through the door at (27,2).

Dungeon 17

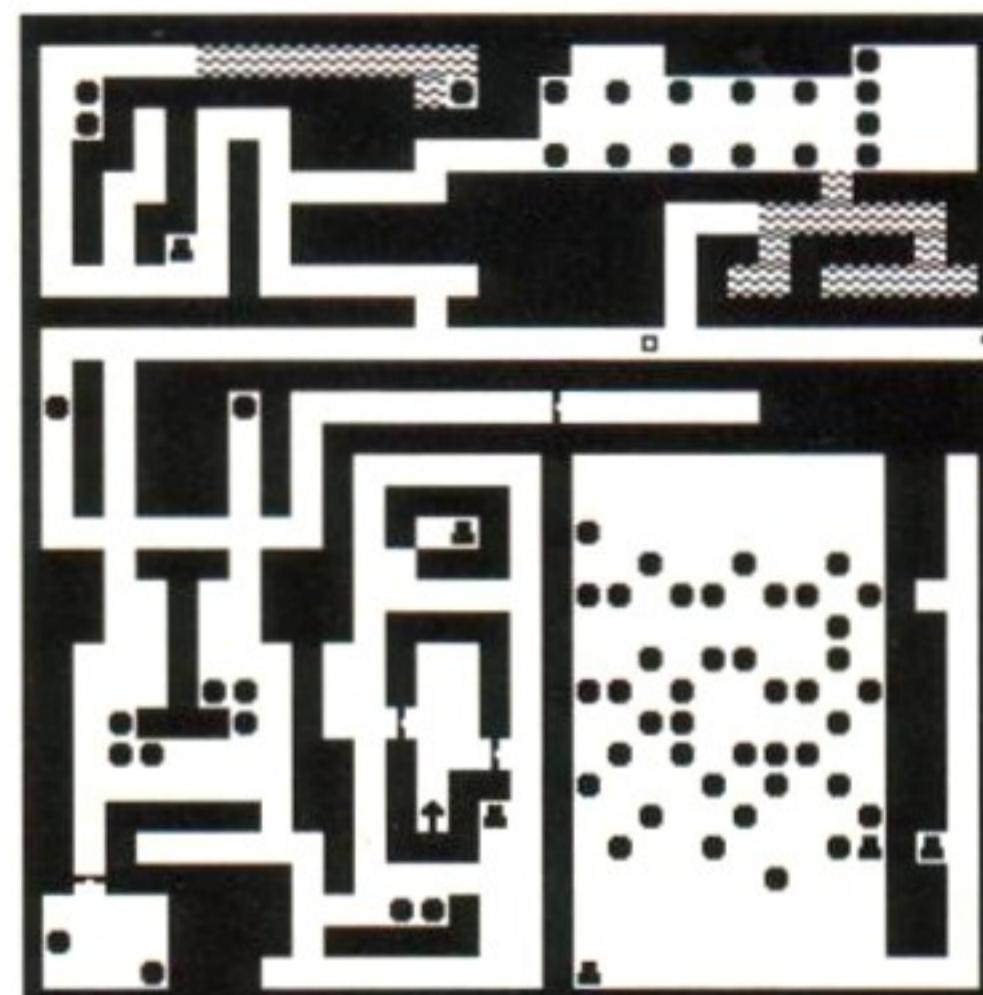
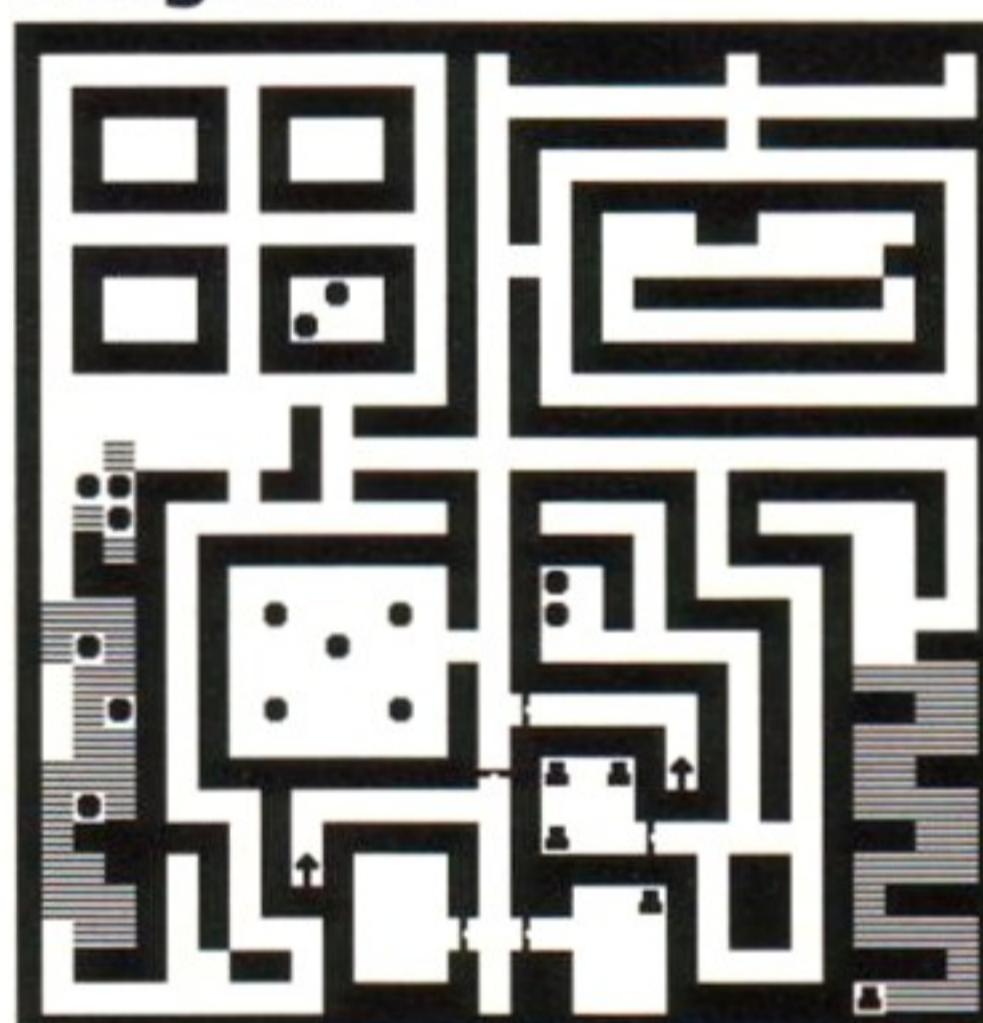
Go to (26,24), and then get the key from within the fire. Make your way to the pit at (1,15) which will take you to (1,26).

Get the feather key at (5,28) and use S1 (8,28) which will open the door at (12,29). Use the feather key at (19,29) then go around to the next door where you should use the second feather key. Now go to the pit at (7,13). Read the notes for dungeon 18 before dropping down the pit.

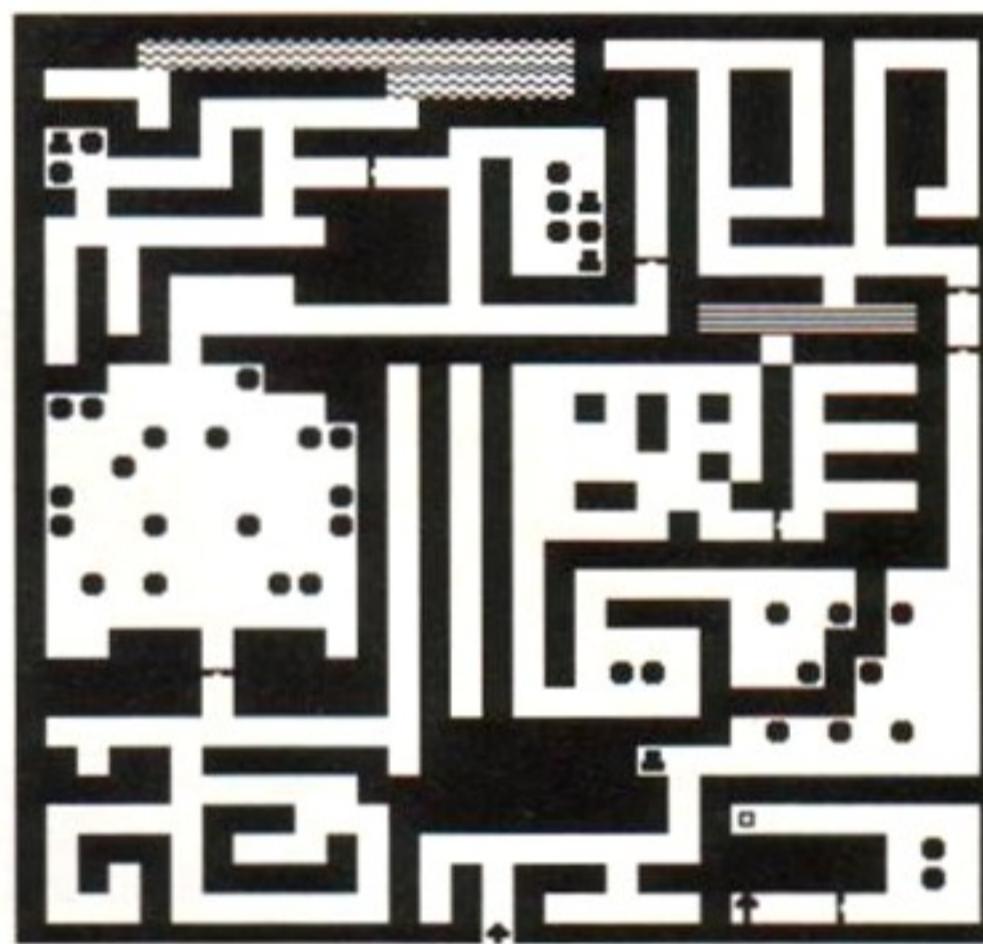
Dungeon 18

When you drop down the pit from Dungeon 17, you appear right over the pit at (20,10). You must use a levitate spell if you wish to remain here. Go to T1 (23,12) which will take you to (18,14).

Use the various switches on the walls to get the key at (26,18). Go to T2 (30,14) which takes you to (16,23). Open the door at (11,22) using the key, and go through the stairs at (13,25). This takes you to the north-west of dungeon 17 where you will find a key. Return to dungeon 18 and use the pit at (20,10) to get to dungeon 19.

**Dungeon 19**

Try opening the door at (15,23) with the key that you found in the fire when you were in dungeon 17. Now go to the stairs at (9,26) which will take you to dungeon 20.

**Dungeon 20**

Get the key at (29,6). Go back and use S1 (27,23) which opens a wall at (23,23). Now go and open the door at (24,16) with the crystal key, and use T1 (28,13) which takes you to (14,12). Use S2 (14,16), taking you to (12,12).

Use a True Seeing spell at (2,25), revealing S3 which opens the door at (6,22). Head north and get the key from the water room at (4,3) then use it to open the door at (20,8). Use T3 at (20,3) which takes you to (30,29) where you can use the pit or stairs to reach dungeon 21.

OH NO!
IT'S THE PATHETIC TIPS...

Prodata Main Menu
O - Open database
C - Catalogue files
D - Display/edit records
S - Select all
I - Invert selection
F - Filter records
P - Print menu
A - Alter/create database
U - Utilities menu
Q - Quit

What's this? A Prodata screenshot in GameBusters. Well it is the Pathetic Tips corner.

The following letters arrived in the GameBusters postbag during the last month...

"Dear Andy,

I am writing to you regarding the Prodata database that was on one of your Coverdisks on the February issue of the magazine.

"I have found the database very useful, helpful and fun to use. The one problem which I experienced, though, was having to wait for the disk to access every so often..." and the letter continued in this manner for a considerable amount of time. Was it a joke? Let's read on further: "...1. Boot your Workbench disk as normal. 2. Select EXECUTE COMMAND from the Workbench...". Obviously not.

So was it for Pat and Workbench or Answerfile? Er, no. The letter finished with: "If this tip is a winner, I would like Combat Air Patrol. Yours Sincerely, Chris Zurowski-Aiad." Good grief. Erm, Chris - I think you should go for a long lie down. Have an AF pin badge for trying, though.

Compared to the next letter, though, that one seems perfectly natural:



If you want some help with Superfrog then see last month's issue, 'cos this one's pathetic!

Dear GameBusters,

On Superfrog, go to the options screen, and set your options to suit your needs. Press fire to exit, then wait until the first screen appears, with the amount of points for each item that you collect. Press fire, then start your game. Superfrog will now be a lot faster than normal.

Paul Mitchell
Glasgow

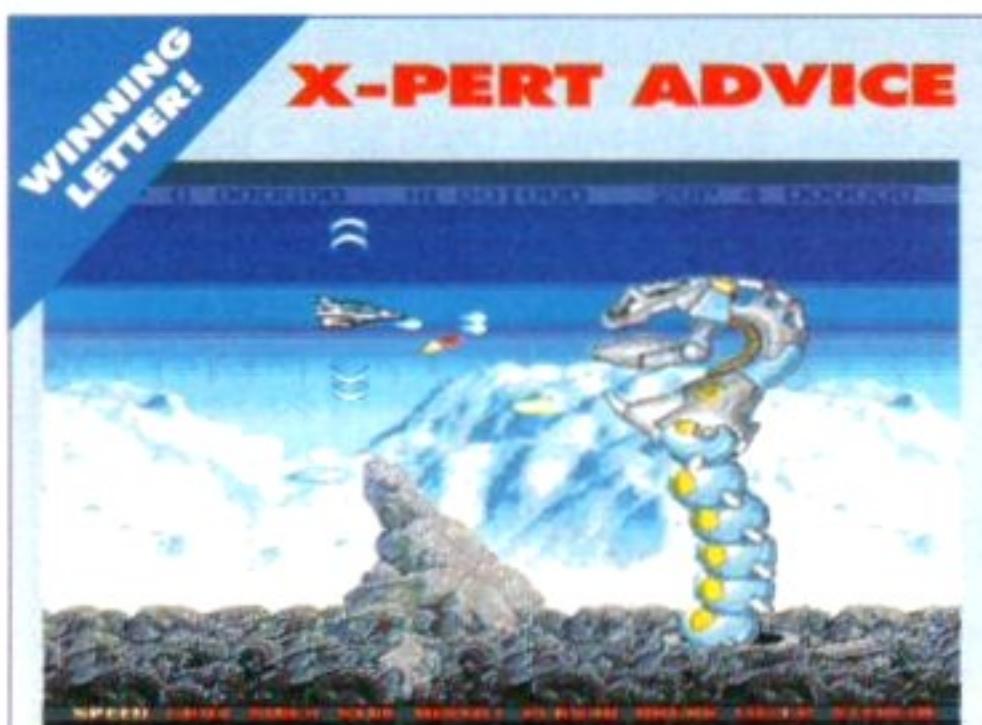
Err... what substances have you been on, Paul? When you press fire to begin the game it makes no difference to Superfrog's speed. Nice try, however.

Sadly, these are all the pathetic tips we've had. What's up? Come on, keep 'em coming, people. This column needs you.



Helping Hand

Welcome to the pages where **Andy Nuttal** tries to answer some of the more heartfelt pleas for help with games. Let's look at some of the latest problems...



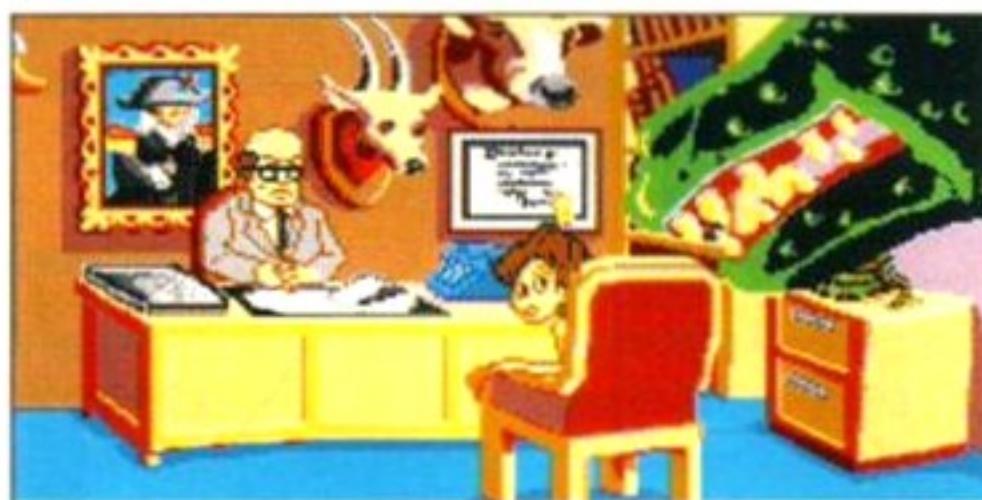
Having trouble getting past this beast? Help is only a Team 17 disk away.

Concerning the tip for *Project X* sent in by Oli and Jeremy Paul in your June '93 edition, Nutts was so smug putting it in the Pathetic Tips column and giving it the thumbs down. In fact, it's correct. Oli & Jeremy just forgot to mention that you need to send off to Team 17 for the disk which contains the cheat. Once you get it, load it into *Project X*, and the cheat is active. Ta-daa!

Wayne Hansford
Ferndown

Nice one, Wayne. Martyn Brown of Team 17 asked me to point out that anyone requiring the cheat should include £2 to cover postage and packing. Have a *Psygnosis* game!

GOING NOWHERE



"One day, lad, all this will be yours." Achieve success in WB simply by following the directions below.

I've just bought *Willy Beamish*, and I can't get very far in it. I can get out of school, get my sister's diary and the lottery ticket, but I can go no further. Help!

Someone who isn't good at W Beamish Somewhere

On day three, after you pick up the lottery ticket from outside the OK T-Shirt Kiosk, go to Tootsweet and pick up an entry blank, then go to West Frumpton. At 7pm a gang will beat you up, so before then make your way to the Golden Bowl. Keep trying to get in until something happens, then make a break for the Tootsweet Pavilion. When you see someone familiar, choose the 'Help! Those guys are gonna clobber me!' dialogue. You will then be in the Local #409 Plumbers Union.

If you're stuck on a particular game or have a solution to a letter printed in the magazine, then write it down and send it in to us at **HELPING HAND** Amiga Format, 30 Monmouth Street, Bath BA1 2BW.

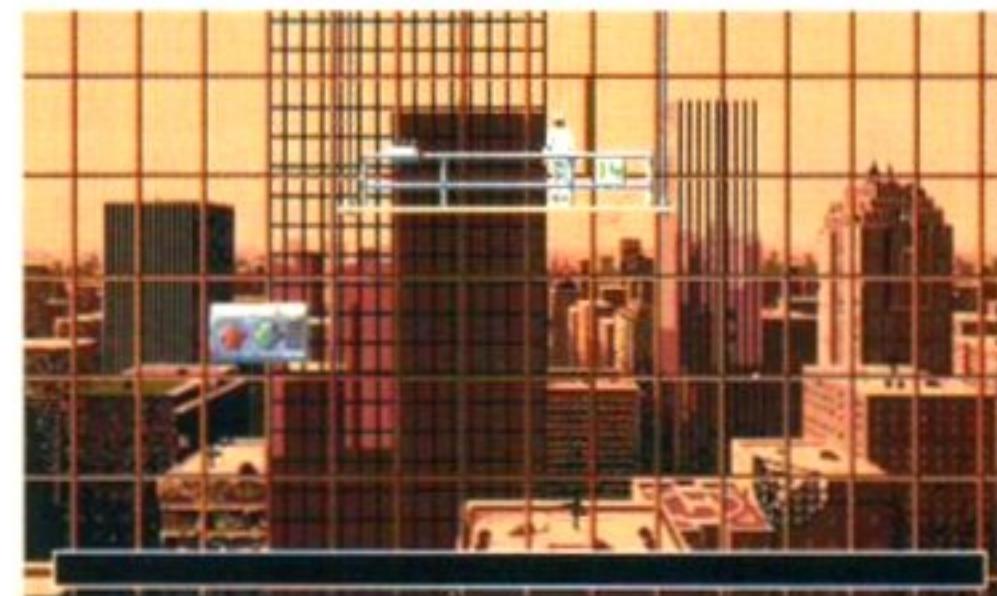
AZTEC PLEA

Greetings from Canada! I'm having trouble with *Gold of the Aztecs*. Could you give me a cheat for the game?

Brad Arndt
Ontario

Er, no, actually. I reckon somebody out there might, though (cue somebody writing in, hopefully...)

FUTURE ESPIONAGE



In the future, window cleaners have a hard time - there's no more two up, two down houses around!

In *Future Wars*, I've got into the building, and into the room with the typewriter and the map by placing the bucket on the boss' door. I have the flag, the sheaf of paper, a plastic bag and the insecticide, but what now?

Gareth Roberts
Swansea

Examine the map, put the flag on the hole in the centre of it. Save your game, exit east and examine the keypad. Operate the keypad, and punch in each number (40315) before the ceiling descends. Go north, then east, and examine the photocopier. Use the paper on the opening, and operate the green button, then the red button. Take the documents, and go to the pool of light to teleport.

MUSICAL BENCHES

In *Operation Stealth*, what do you do when you're in the park wearing a red carnation?

Richard Young
Sheffield

Use the carnation on John, go to the park and walk around the bench until your contact appears. Once you have the card and key, exit right and go to the bank.

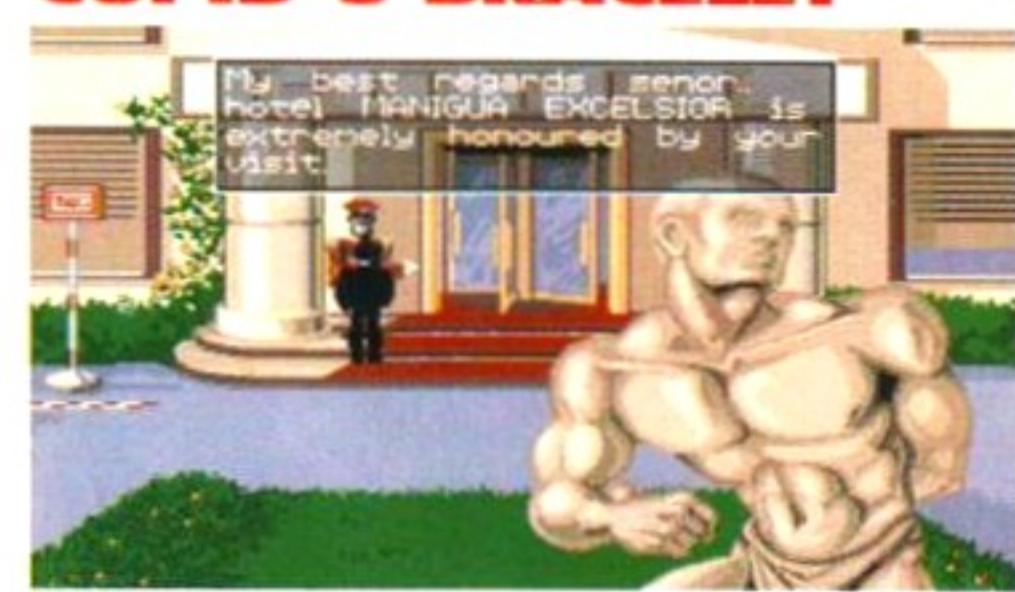
HARD CELL

In *Shadow of the Beast 2*, the goblins in the caverns lock me in the prison with a man, and if I try to hit the door the guardian electrocutes us. How can I escape?

Manel Méndez
Barcelona, Spain

Offer the ale to the goblin, and use the mace to break the cage door. Go up to the top, then left, then kill the goblins to collect the ring. Now go down, then kill the sleeping guard to collect the key. Go back and release the remaining prisoner from the cell above yours.

CUPID'S BRACELET



Save your marriage by working out until you look like this... or alternatively pay a visit to the seabed.

I have been stuck for several weeks in *Operation Stealth*. Once on the seabed I activate the bracelet, and am released from my bonds, but I can't swim off screen. I assume I must have to release the girl before being able to proceed, but I can't do it. Any help would be most welcome (it might even save my marriage).

S L Hudson
Dhahran, Saudi Arabia

Simply wait for the girl to reach the seabed, then OPERATE her, then swim to the surface to be rescued.

SPELLING IT OUT

In *Elvira 2*, from whence does the brain come for the 'turn undead' spell? Also, do I use that spell on the vampire in the attic? If so, how do I get past the maggot-mouth in the kitchen?

In *Hitchhikers' Guide to the Galaxy*, I have finished the game, I have survived the Beast of Traal, I have gathered all the fluff, I have even made a cup of tea - but I can't get Marvin to open the hatch to let me on to Magrathea!

Mark Hardwidge
Tonypandy

In the haunted house (*Elvira 2*) go from the dining room to the meat locker via the serving hatch. Get rid of all the nasties, then turn right and go down the stairs. Now go left to enter the lab, where you will find several items including the brain.

In *Hitchhikers'*, make sure you have got the fruit which you should have grown by planting the fluff in the plantpot earlier in the game. In the Access Space, Marvin will ask you for the 10 tools you have collected throughout the game. You can only take one at a time into the Access Space - but you must take the right one first time. Eat the fruit before you go in to give you a glimpse of the future, and tell you which tool to take. Get it wrong, and Marvin won't do anything.

PERSIAN BUG

Is there a cheat for changing levels in *Prince of Persia*?

Clinton Thorpe
Melton Mowbray

Yep, simply hold down the Caps Lock key and press L.

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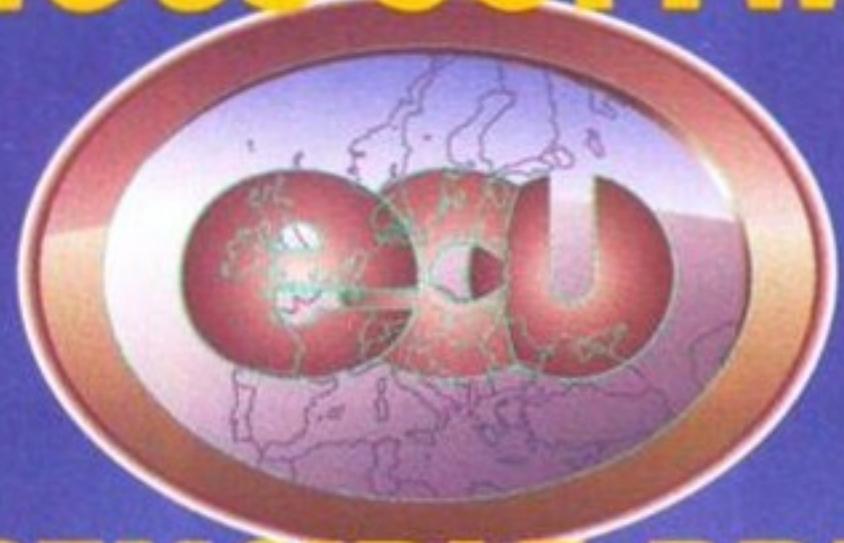
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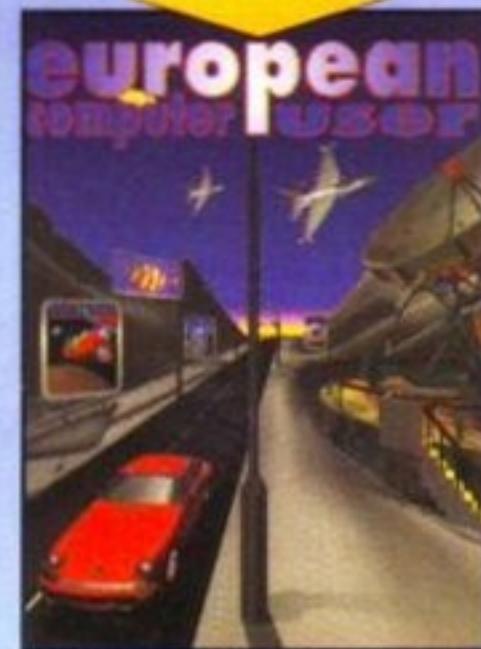


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HAVING GIVEN YOU all the groundwork to produce your own game, it's time to add yet more enhancements.

More tweaks

Last issue's **AMOS** pages tied in very nicely with the PD-DIY feature which taught you how to go about creating your own demo. Now, though, it's back to our scheduled program. So far we've touched on a lot of things to do with games and other types of programs. There's so much to the program we could quite honestly run tutorials forever. This month we've got a little something to add to your game, based on everything you've learned over the past eight months.

AMOS extras

A game isn't really playable until you've ironed out all the basic game concepts, like moving the player and the aliens about and making sure it's all working properly. So far we've covered everything to do with object movement except alien waves - those screaming alien gribbles which tear out of the skies and strafe you with large amounts of death. As

well as that we'll also be covering starfields, plus a call for all your best routines in **AMOS**.

Attack waves

Up until now the attack waves in the arcade games that you've made have been elementary to say the least. In most **AMOS** literature you will find **AMAL** being pushed as the way to move stuff around, but as we've said previously it's best to do the work in **AMOS** and lose **AMAL** wherever you can.

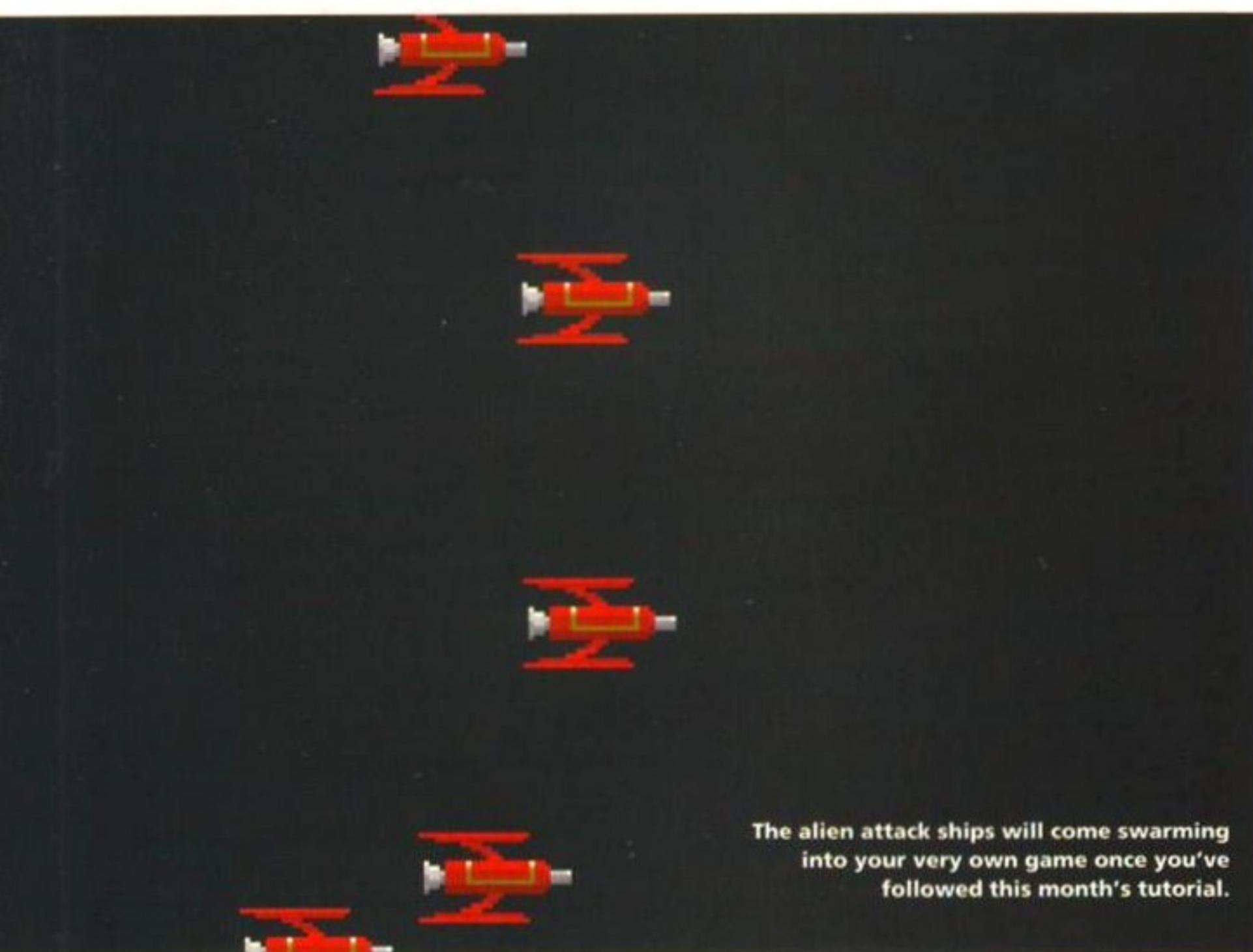
The easiest and best way to do this is to create what we call a movement table, which is simply a list of coordinates describing the path of the sprites, and of course a table for each alien which needs moving. First you create dimensions for an array:

Dim X(500), Y(500)

and move the sprites using:

Bob 1, X(N), Y(N), 1

where N is the next coordinate in the list, obviously incrementing the numbers using a loop.



The alien attack ships will come swarming into your very own game once you've followed this month's tutorial.

most from COVERDISK

You can also generate an attack wave, in the same way as you'd draw a line on screen. A sine wave is the easiest type of curve, but of course there are more types (see last issue for a circular or elliptical path).

A simple sine wave could be produced by doing the following:

```

Degree
M=0 : D=360
For Z=1 To D
  Inc M
  X(M)=M
  Y(M)=80*Sin(Z)+100
Next Z

```

And that will be your movement table. You could go to the trouble of loading all these coordinates into an array (remembering of course to create a dimension of it first). Try experimenting with a table which sends a number of bobs in a circle and then sends them off the screen. It's just a simple matter of making the loop for the circle, and then cutting off to a sub-routine to send them off screen one by one.

Moving multiple bobs is the only other thing you have to know. Obviously if a group of aliens moves in a line like in our old example from *BugHunt.AMOS*, then you simply offset each bob from the one before creating a group of bobs which move together. But attack waves tend to send one alien on at a time with a short delay. If this is the case, all you have to do is have the one attack pattern, but feed it to the sprites one by one.

First you have to set up the variable buffer space. Obviously we are going to be using a few variables and the values are going to push the system a little bit. You will see that if you start the program without this line you get an Out Of Memory message. Simply increase the buffer in increments of 5K at a time and you'll discover the correct amount of buffer space to add.

```

Set Buffer 40
Dim X(1000),Y(1000)
Dim D(16),NM(16)

```

This gives you enough space to create dimensions for the arrays and use them. A 'gosub' command to the movement table sends you into that subroutine and we'll come to that shortly.

After turning on the Double Buffering and doing all the other display jazz like clearing the screen, you will find you're back at the Autoback command.

Autoback 0

This sets up the automatic screen copying mode, which when you are using a Double Buffered screen (which we are in this case) synchronises your screen drawing operations with the movements of the blitter objects. Setting Autoback to 0 engages manual mode, which means that screen operations are performed at the maximum speed possible, reducing any annoying flicker.

Continued overleaf

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Those listings in full

```

Rem * Moving Bobs *
Rem
Set Buffer 40
Dim X(1000),Y(1000)
Dim D(16),NM(16)
Gosub _MOVETABLE
Double Buffer
Load "afbughunt/sprites.abk"
Flash Off
Get Sprite Palette
Cls 0
Autoback 0
SHIP=1 : SP=4
'
Do
  For B=1 To NB
    If D(B)>0
      Add D(B),-1
    Else
      P=NM(B) : Bob
      B,X(P),Y(P),SHIP : Add NM(B),SP,1 To N
    End If
  Next B
Loop
Stop
'
_MOVETABLE:
Degree
F=1 : W=50 : H=100
CX=160 : CY=100

```

For ST=0 To STARS

and initialise the steps, or each loop, using a label rather than a proc:

Gosub INIT_STEP

The phase angle, which direction the stars go in, is set in this line, not unlike the vectors we used in the ping pong game:

```

PHASE=Rnd(CY)/16
X(ST)=PHASE*X_STEP(ST)
Y(ST)=PHASE*Y_STEP(ST)
C(ST)=Rnd(14)+1

```

Next ST

Now the main program loop, which calls the two sub-routines and moves the stars:

```

Do
  Cls 0
  For ST=0 To STARS
    Gosub MOVE
  Next ST
  Screen Swap
Loop
End

```

The sub-routines which do all the work are at the bottom of the program which randomises the initial position:

```

INIT_STEP:
X_STEP(ST)=8-Rnd(16)
Y_STEP(ST)=8-Rnd(16)
Return

```

```

N=0 : NB=5 : D=F*360
For P=1 To D Step F
  Inc N
  X(N)=W*Sin(P)+CX
  Y(N)=H*Cos(P)+CY
Next P
For B=1 To NB
  D(B)=B*10
  NM(B)=1
Next B
Return

Rem * Starfield *
Rem
Screen Open 0,320,200,16,Lowres
Curs Off : Flash Off : Cls 0
Double Buffer
Hide
CX=Screen Width/2 : CY=Screen Height/2
Update Off
Autoback 0
STARS=20
Dim X(STARS),Y(STARS)
Dim X_STEP(STARS),Y_STEP(STARS)
Dim C(STARS)
For ST=0 To STARS
  Gosub INIT_STEP
  PHASE=Rnd(CY)/16
  X(ST)=PHASE*X_STEP(ST)
  Y(ST)=PHASE*Y_STEP(ST)

```

```

C(ST)=Rnd(14)+1
Next ST
Do
  Cls 0
  For ST=0 To STARS
    Gosub MOVE
  Next ST
  Screen Swap
Loop
End
INIT_STEP:
X_STEP(ST)=8-Rnd(16)
Y_STEP(ST)=8-Rnd(16)
Return
MOVE:
Add X(ST),X_STEP(ST)
Add Y(ST),Y_STEP(ST)
X=X(ST)
Add X,CX
Y=Y(ST)
Add Y,CY
If X<0 or X>Screen Width or Y<0 or
Y>Screen Height
  Gosub INIT_STEP
  X(ST)=0
  Y(ST)=0
End If
Plot X,Y,2
Return

```

And the move sub-routine governs the direction and speed of each star, 20 in total. As with a lot of AMOS which moves stuff around by calculation, you set up the initial circumstances and let the add x, add y lines do all the shifting for you. (You can produce attack waves like this if you like!)

```

MOVE:
Add X(ST),X_STEP(ST)
Add Y(ST),Y_STEP(ST)
X=X(ST)
Add X,CX
Y=Y(ST)
Add Y,CY

```

After all the ADDs you check to see if the dots have reached the edge of the screen. If they have you go back to INIT STEP to go back to the middle of the screen.

```

If X<0 or X>Screen Width or Y<0 or
Y>Screen Height
  Gosub INIT_STEP
  X(ST)=0
  Y(ST)=0
End If

```

The plot command finally plots the point on to the screen, after all that calculation.

```

Plot X,Y,2
Return

```

You can sit and watch this for ages before you get bored. You can adjust the flow of stars to be affected by joystick input, which gives a feeling of movement through space, not unlike the old *Elite* game, in fact. All you have to do is alter MOVE to accept input

from the stick using the JOY command. Then you pass this data to the algorithm in MOVE to shift the plot points of the stars up or down depending on the direction the stick is pointing. Another idea is to create a side view so the stars go by as if you're looking out of a side window of a spaceship. How about linking a keyboard key to switch procedures so that one key is looking out of the front of the ship, another out the side, and another behind? It's all possible using plotted points and scrolling.

Go for it

So there you have it. Moving things with seeming intelligence and purpose in a completely random way. AMOS is good at this sort of thing, but it's down to you to evolve or collect routines which do something useful. Do you have any routines you can't do without? How about sending them in to us here? When we finish the series we'll do a little roundup of your best code, and dish out prizes, OK? (Send your code to the usual address marked "AMOS Best Routines").

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How the Rating System Works

SPEED (marked out of 5) ● ● ● ● ●

Tremendously important for both hardware and software; there's nothing more annoying than waiting. A purely intuitive judgement.

DOCUMENTATION (out of 5) ● ● ● ● ●

Although there are some packages that are so simple that no manual is needed, complex items benefit hugely from a good explanation.

ACCESSIBILITY (out of 5) ● ● ● ● ●

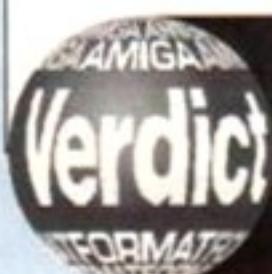
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Does it do what you want it to do? How well does it do it? And does it also do lots of other things that you'd never have thought of?

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A pretty important rating, this one, if a product does everything you could wish for, it's no use to you unless you can afford to buy it.



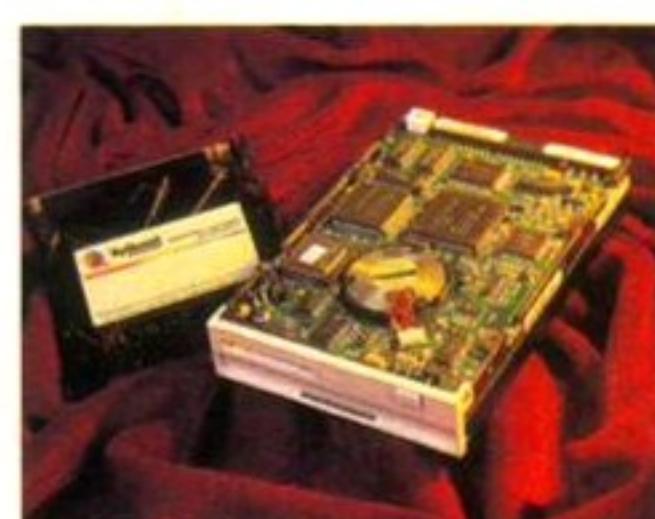
The Verdict, our at-a-glance overall rating, is a percentage: it's based on sheer quality, but with price taken into account, so that you know what kind of a deal you get.



Multimedia PANDORA'S CD

Does multimedia do anything for you? Yes? Then snap up this demo CD of clip art and sounds, all for under a fiver ...

Page 122



Hardware SYQUEST IDE DRIVE

The hottest drive to hit the Amiga scene in 1993 that's good value for money too? You're not dreaming – find out the reality on ...

Page 125



Music Sampler HOME MUSIC KIT

More than just a sampler, this kit from Power Computing also has a sound processor, stereo speakers and MIDI interface! Sound good? Then tune in to

Page 132



Competition WIN A DAY'S RECORDING IN EVELYN GLENNIE'S STUDIO

...and a copy of *Bars & Pipes Professional 2* sequencer in this easy to enter competition

Page 135



Hardware JOYSTICK/MOUSE SWITCHERS

Using a switcher to move from mouse to joystick can save your port or plugs (and yourself) from wear and tear. We try out two models on...

Page 136

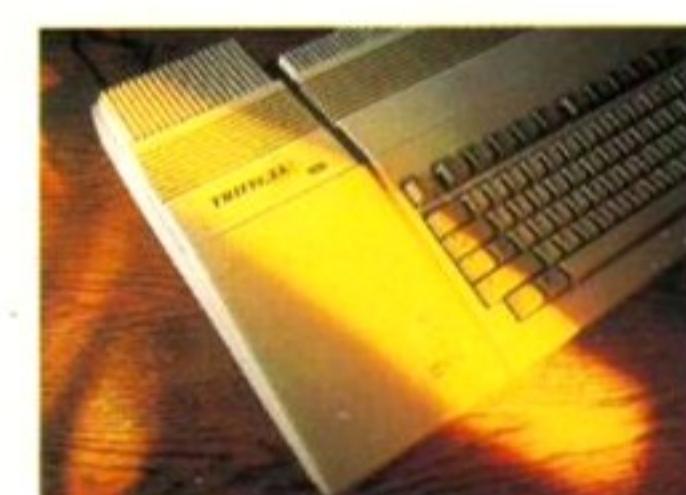


Integrated software

INTEROFFICE

Offering three programs – a word processor, a spreadsheet and a database – in one, *InterOffice* may be all the software that you need to get your life in order. Find out on...

Page 118



Hardware TRIFECTA 500 LX HARD DRIVE

Time to make your machine quick and powerful? Not just another hard drive, this one offers 80Mb and some out of the ordinary extras.

Page 121

Need a word processor? How about a spreadsheet and a database? Don't buy them separately – you can have all three in one package! **Jason Holborn** checks out the latest in home office software.

InterOffice

Integrated Software ■ £49.95 ■ InterActivision

AS WELL AS playing games, many Amiga owners use their machines for 'serious' work. To most of us, this means either you want to write a letter or a report, perform some complex calculations that are beyond the average handheld calculator, or you need to keep track of large amounts of information.

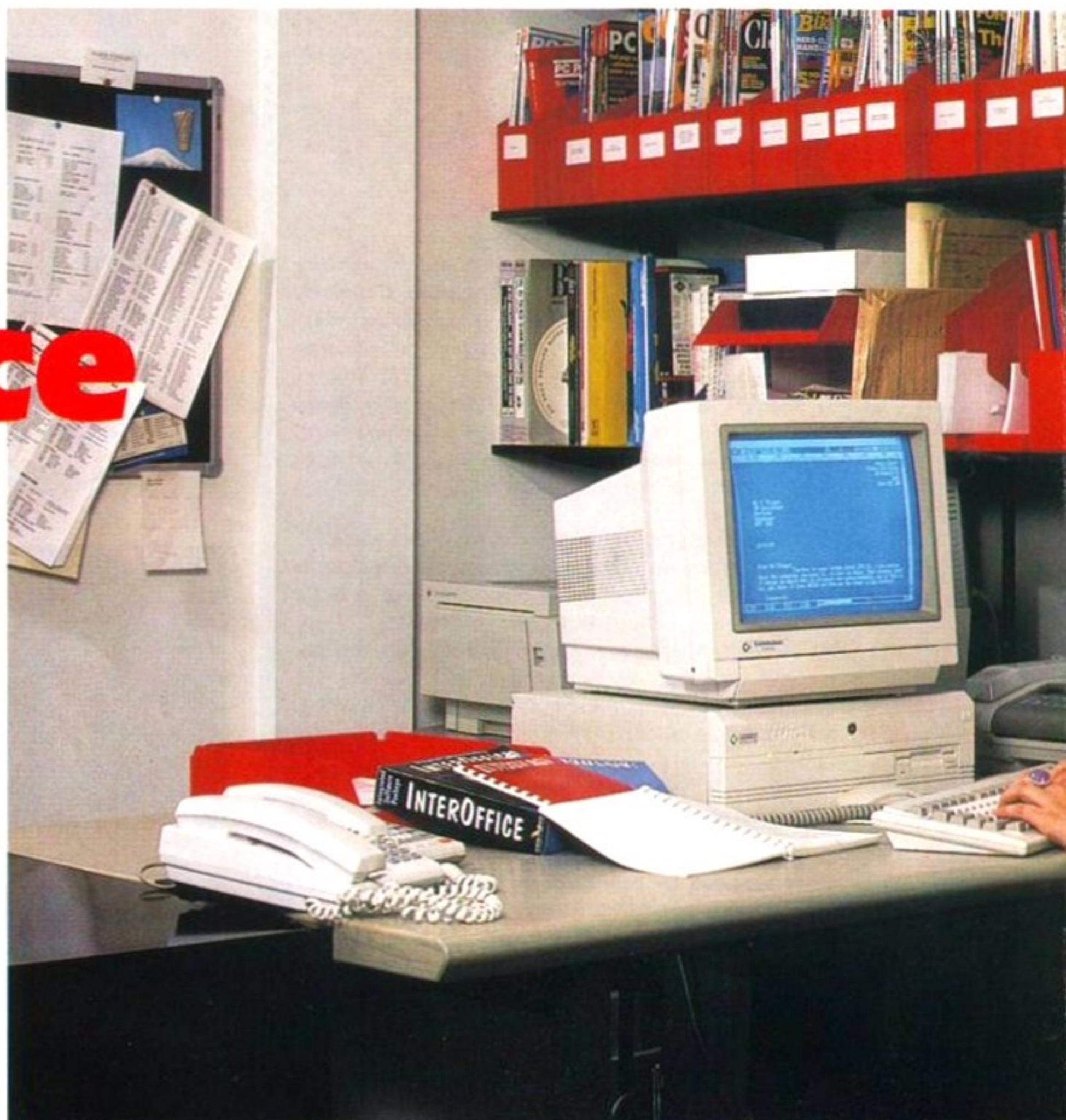
There isn't one program that will do them all – you need a word processor for writing letters, a spreadsheet for heavy number crunching and a database for filing and information storage. Buying all three separately can be expensive, so it's worth considering an 'integrated' package like InterActivision's *InterOffice*.

The idea behind an integrated package is that the programs you need to carry out these basic functions are bundled together in such a way that they share a common user interface, can swap data (you can load a section of a spreadsheet into your word processor, for example) and all of them run from a single Shell program (a menu, basically).

Integrated business packages are big business these days, simply because they give you everything you want in one affordable package. Already quite a few are available for the Amiga including Europress' recently released *Mini Office* and *Gold Disk's Office!* (see below). InterActivision have been quick to jump on the bandwagon too with the release of *InterOffice*: a spreadsheet, word processor and database in one box for just £50.

However, *InterOffice* isn't quite the integrated package that InterActivision would have us believe. It is about as integrated as any other software bundle, and this is precisely what it is. InterActivision have put all three of their previously separate Amiga business programs (*InterWord*, *InterSpread* and *InterBase*)

With *InterOffice* you get a word processor, a spreadsheet and a database in one package for just under £50.



into one box, still with three separate manuals, and all sharing the same pseudo Intuition-like frontend, but then they always did! To be fair to InterActivision, *InterOffice* does work as an attempt at an integrated business package. There's no common Shell program that can be used to load either of the three programs, but the rather non-standard user interface shared between the programs give them the sort of uniformity that an integrated package needs. And they're not bad programs either!

The first program is *InterWord* which is a very good word processor. While it does not support the more cosmetic features that have made programs such as Digita's *Wordworth 2* such a roaring success (outline fonts, picture importation, full colour support), it's excellent if what you need from your WP is a program

that can process words. As you would expect, *InterWord* excels at processing large sections of text and it offers all the usual functions for marking, moving and cutting wads of text.

It also comes with a spelling checker that boasts a 137,500 word dictionary. A thesaurus is not included, but *InterWord* does offer some extra features rarely found in word processing systems at this price, including soft hyphenation and index generation. And, because the program doesn't mess around with graphics or pretty fonts, it chugs along at a very acceptable rate, rivalling *Protex* with ease.

InterWord can also load worksheets from *InterSpread*, although they have to be saved out to disk from *InterSpread* and then loaded into *InterWord*. If *InterOffice* were truly integrated, this sort of thing would be possible with a single keystroke.

INTEGRATED OFFICE ALTERNATIVES

GOLD DISK OFFICE

£69.95 ■ Gold Disk UK 0743 350551

Gold Disk know a thing or two about writing solid Amiga applications and *Office!* doesn't disappoint. Based on cut down and reworked versions of existing Gold Disk products, such as *Advantage* (spreadsheet), *Transwrite!* (word processor) and *PageSetter* (DTP), plus a previously unpublished flat file database, *Office* offers value for money.

Although *Office* is based around programs that were sold separately, they work together surprisingly well thanks to file compatibility between the modules and a standardised Workbench 2.0-like frontend that has been incorporated into all four

programs. In all, *Gold Disk Office* is without doubt the best home office package.

MINI OFFICE

£59.95 ■ Europress Software 0625 859333

Running from a central menu system, *Mini Office* for the Amiga offers a good word processor, a spreadsheet, a database and a graphing module all in one. It's a more complete package than *InterOffice* (*Mini Office* is a true integrated package rather than just a bundle), but it still comes second to *Gold Disk's* offering. Although the Amiga version of *Mini Office* was only released last year, the name has been floating around for almost 10 years.

miniOffice

Database

Wordprocessor

Graphics

Spreadsheets

Graphs

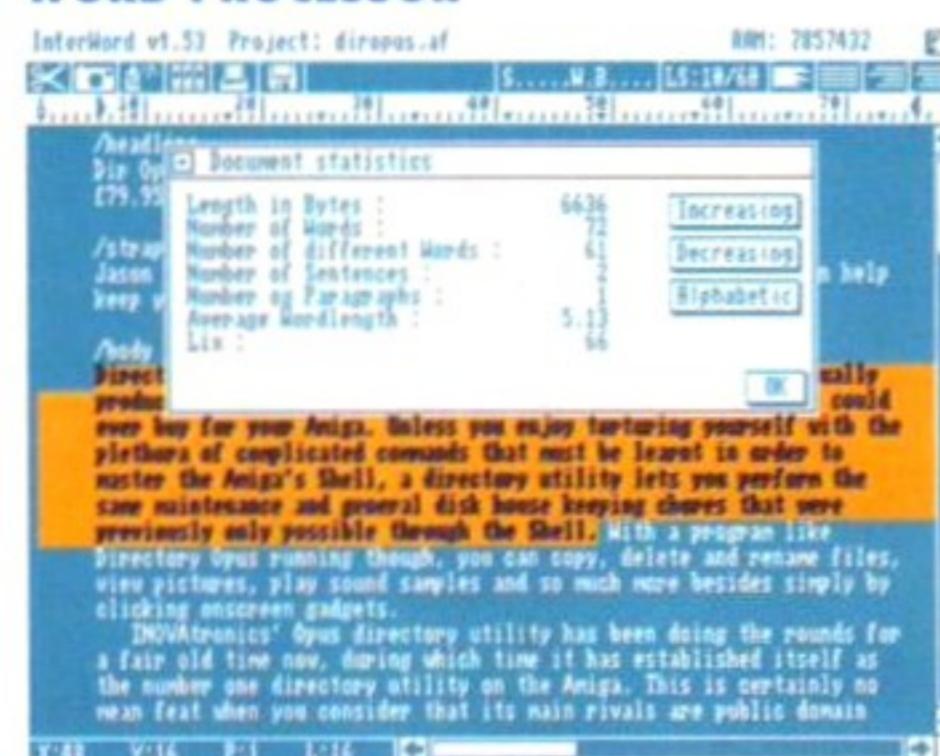


Although *Mini Office* for the Amiga was only released last year, it has been around for 8-bits for 10 years now.



The InterOffice modules

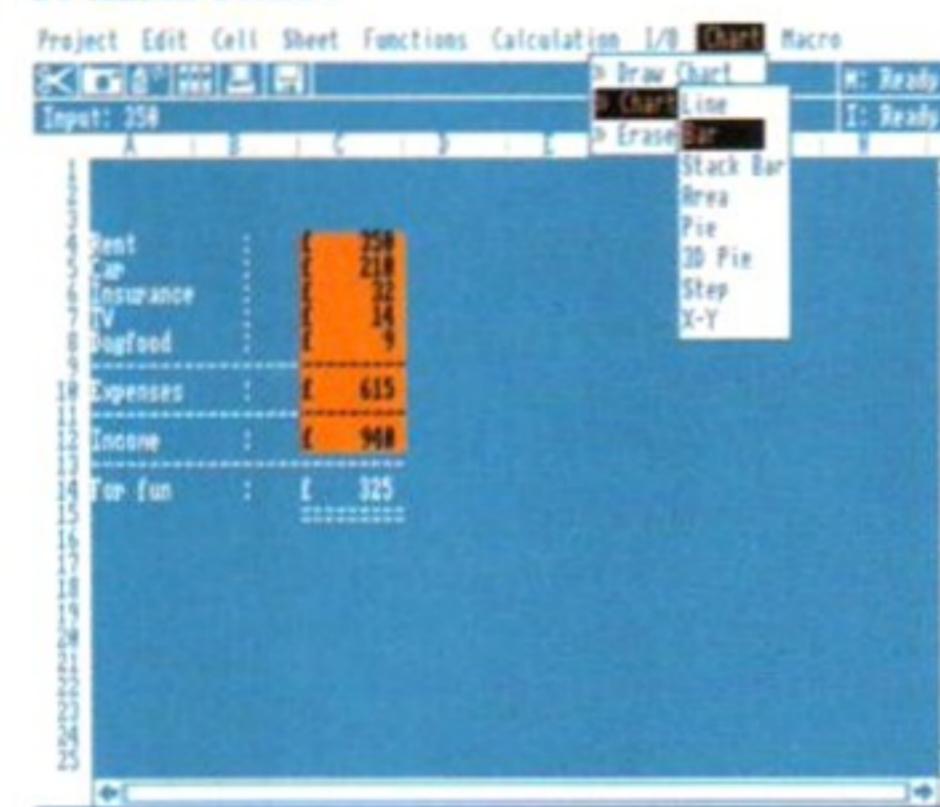
WORD PROCESSOR



InterOffice's word processor is a fairly well-endowed text processor that sacrifices the more cosmetic graphics functions of word publishing programs such as Digita's Wordworth

for raw text-editing power. Although it does not include a thesaurus, *InterWord* offers a comprehensive 137,500-word spelling checker and several quite powerful word processing functions such as soft hyphenation and index generation. For pure word processing tasks, *InterWord* is very good indeed.

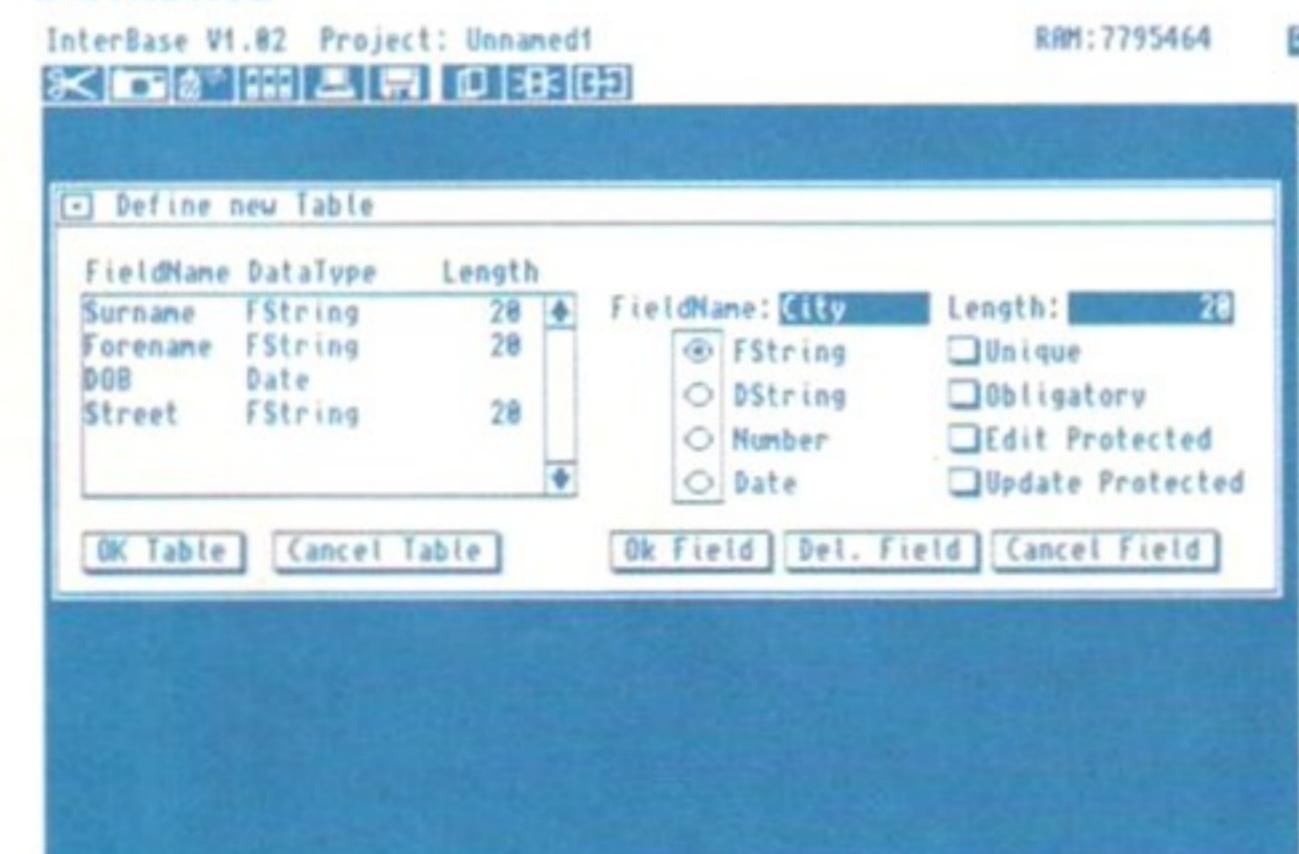
SPREADSHEET



InterOffice's spreadsheet is a fairly powerful character too. Offering over 60 mathematical functions that covers scientific, trigonometry, calculation of annuities dates. Each and every cell

can contain a number, a string of characters or a formula built up from any combination of the functions on offer. *InterSpread* can also generate charts too - there's a total of eight different types on offer ranging from pie charts to stack and line graphs.

DATABASE



The weak link in *InterOffice* has to be its database program, *InterBase*. Although *InterBase* can handle most people's requirements, a rather quirky frontend makes it unfriendly. *InterBase* can handle four basic types of data - strings, dynamic strings, numbers and dates - although its built-in forms designer does allow IFF images to be attached to individual records, adding an extra dimension to your database.

It wouldn't be so bad if the programmers hadn't used non-standard names for some important aspects of the program - a database is called a 'table', for example. With most other databases, a table is a type of form used to display the contents of a database.

InterBase database files can consist of any combination of four basic data types - a fixed string (a string of characters that is restricted to a user-specified number of characters), a dynamic string (like a fixed string but with no size restriction), numbers and dates. I don't like the way *InterBase* handles dates either - to enter a date you must type it in as a six figure number in the format YYMMDD (for example, 4 August 1993, you'd type 930804). This can be changed, but then you shouldn't have to change it anyway!

Like most databases, *InterBase* enables you to create one or more 'layout' which defines how the information is to be displayed on the screen or printed. Unfortunately, this is one aspect of *InterBase* that leaves much to be desired - although you can position both fields and their labels anywhere on the screen, you can't even add simple graphics such as boxes. *InterBase* does let you tinker around with the layout a bit, but it's hardly up to the sort of standards that Amiga users demand.

For a package that offers so much, £50 may seem like very good value, but integrated packages are nothing new now that the Amiga has matured. It's unfortunate some packages are called integrated systems when they are only a compilation of old software. The only true integrated business packages available for the Amiga are Europress' *Mini Office* and MSS' *The Works!*.

At the end of the day, however, we should judge *InterOffice* on the strength of the programs that it offers, but even here it doesn't quite cut it. There's nothing really wrong with the three programs, but there are better compilations available. If you're in the market for such a package, you're better off spending £70 on *Gold Disk Office* - for your extra money you not only get a superior word processor, spreadsheet and database, but a very capable desktop publishing program to boot.

InterOffice

SPEED

The programs work at a very acceptable rate and their user interfaces are responsive.

DOCUMENTATION

Comprehensive, but the *InterOffice* manuals are about as readable as a British Rail timetable!

ACCESSIBILITY

The word processor and spreadsheet programs are easy to use, but the database is a pig.

FEATURES

None of the programs offer anything breathtaking. They get the job done but that's it.

VALUE

£50 for three programs is good value, but there are better packages of this type available.



68%

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GVP have got some stiff competition from ICD in the hard drive department, as **Pat McDonald** has found out...

THE TRIFECTA IS the only A500 drive that contains a SCSI 2 interface. Usually, an A500 hard drive like this contains a SCSI controller to make it work, a SCSI drive to store data on, a SCSI port to connect extra hard drives, and a memory expansion (which is memory added to the computer – the hard drive doesn't store it).

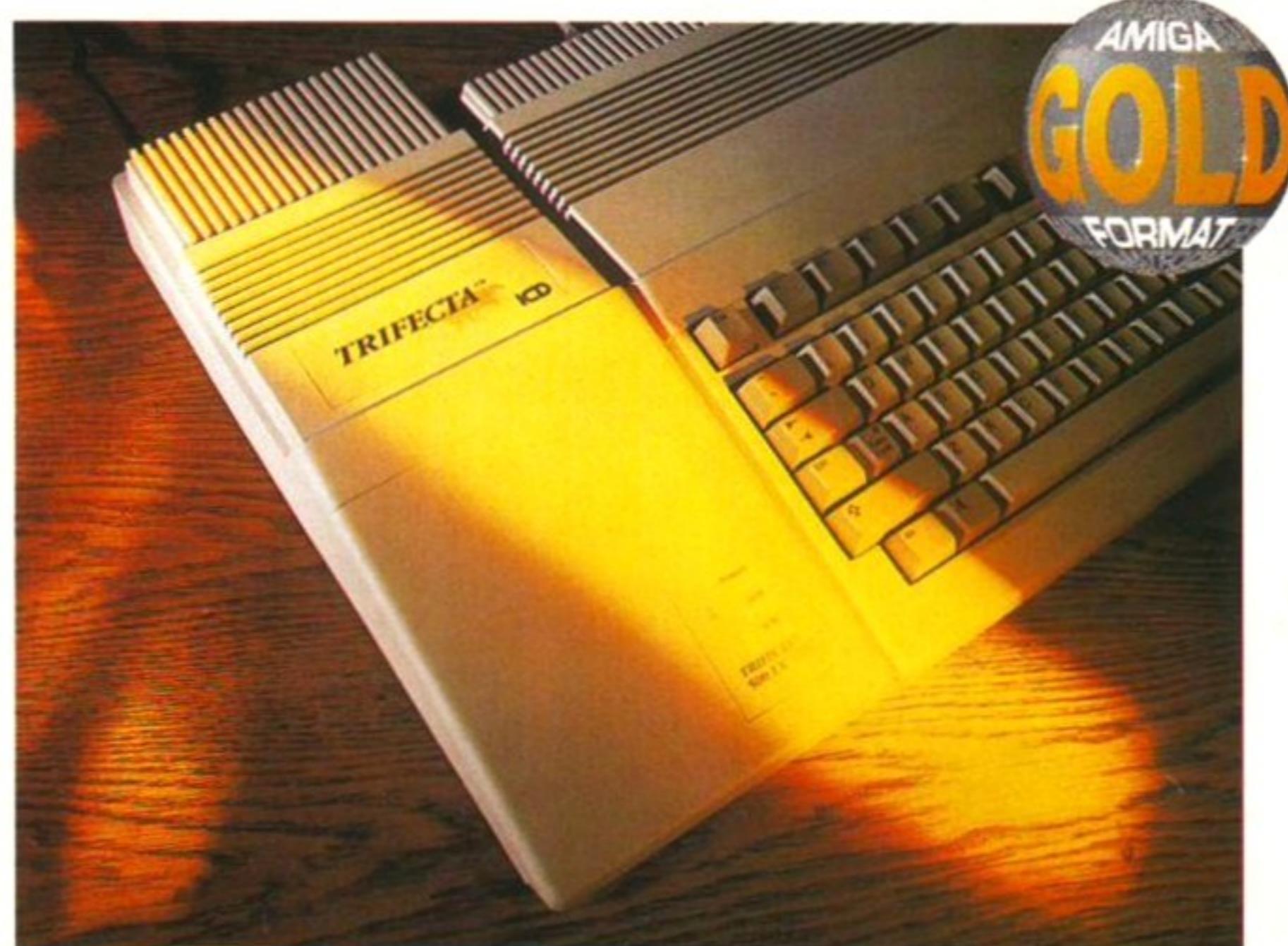
ICD have added some extras to the Trifecta – it has an IDE controller, and you can use IDE type hard drives (either 2.5 or 3.5-inch) instead of a SCSI drive. Better still, you can plug in SCSI 2 hard drives, which are faster than standard SCSI types. SCSI 2 drives are also available in much bigger sizes than either SCSI or IDE. So all three major current hard drive types can be used by this expansion.

In terms of numbers, IDE lets you have two hard disks connected, SCSI permits seven and SCSI 2 can have 15. In theory, you could store incredible amounts of data with this system. In practice, this means an awful lot of plugs, cables and money. Oh yes, ICD have put a Mini-Slot inside the board, so if you want to plug in a GVP PC-286 PC emulator (normally only possible on a GVP hard drive), then it will work on a Trifecta.

Adding RAM to the Trifecta differs to similar products. Instead of plugging in SIMM modules, it uses ZIP chips. I'm not fond of ZIPs, because they are very sensitive to static. If you ever need to add RAM to this drive, it's wise to get somebody experienced to do it for

TRIFECTA 500 LC
is available from
Power Computing
on 0234 843388

A hard drive like the Trifecta it can save you serious amounts of loading and saving time, plus more and more games now are hard disk installable.



Trifecta 500 LX

Hard drive /80Mb £239/160Mb £359/200 £459 ■ ICD

Luckily the Trifecta isn't just for the benefit of A500 owners, it will also fit into an A2000 or A1500.

you. There are two manuals, one for the hardware, and one for the software. They are thorough, but a bit confusing. This is because they detail an awful lot of information for the different configurations, and so not all the information is relevant for one system. Better too much information than not enough, though.

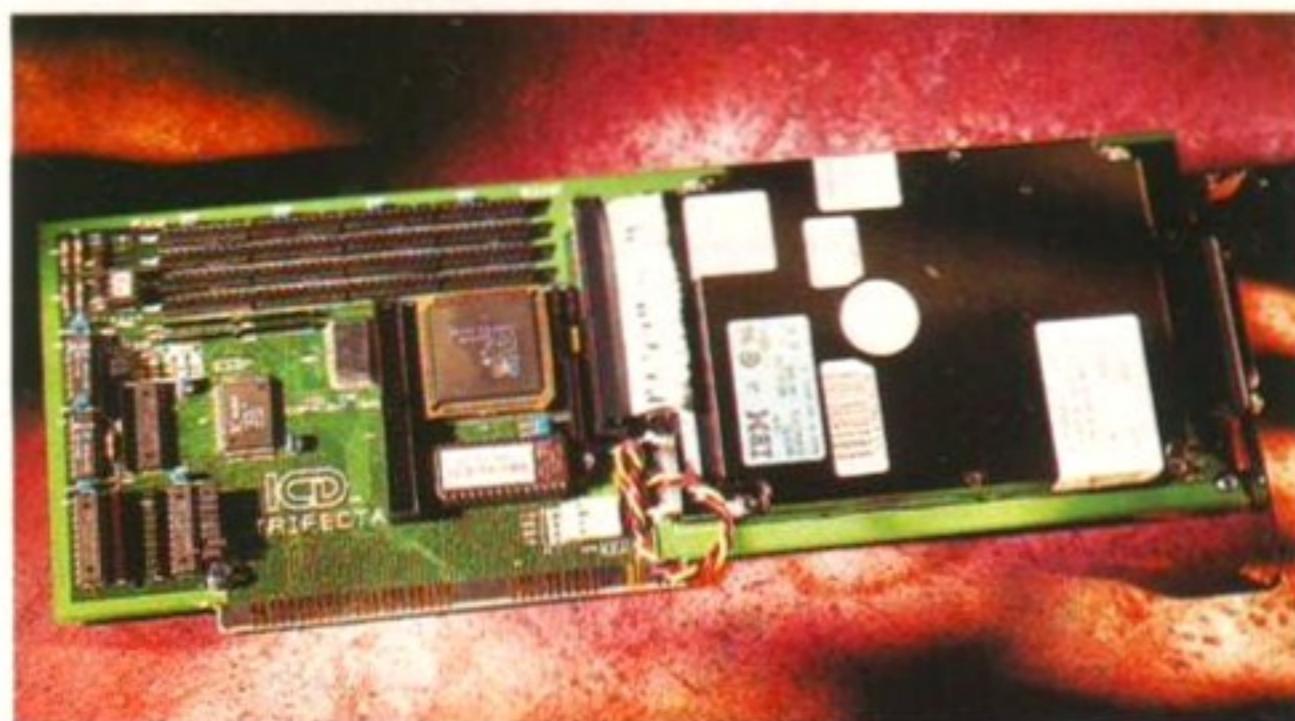
This hard drive does not have Workbench on it because ICD don't know whether you have Workbench 1.3 or 2.04. So you have to format the drive and put Workbench on to it yourself. How you do this is well detailed, and the manual even tells you how to have both Workbenches available, assuming you have two different Kickstart chips.

The physical aspects of the drive are good, but not perfect. The case is contoured to match the style of the computer, but it overhangs the back of an A500 or A500 Plus by

about three inches. The construction of the circuit board is SMT, which (in theory at least) means reliability and longer life. A universal power unit is supplied, which means you can power the hard drive just about anywhere in the world.

Two switches are provided on the back of the hard drive. One controls whether the hard drive autoboots or not. The other determines whether the memory inside the Trifecta is added to the Amiga's total memory or not. These switches (common on hard drives but not always found) are useful for getting software to run that either doesn't like the hard drive or the memory.

ICD have always made good expansions for niche markets. The Trifecta continues this tradition, especially if you want to connect more than just SCSI hard drives to your system. ☺



TRIFECTA CARDS

(80Mb £239/160Mb £329)

If you have an A1500 or A2000, you'll be pleased that ICD do the Trifecta on a card expansion for those machines. This costs £139 for a bare card, or £239 with an 80Mb hard drive. The card does not work on an A3000 or A4000, but gives some impressive potential to the old time, serious user.

The board looks similar to the one inside the A500 version's case, but there are a couple of differences. For a start, there's no power supply – for another, no Mini Slot. However, it does exactly the same job and operates in the same way.

The Trifecta is also available in a 'cut down' version – the Trifecta EC. This costs about £50 less than the LC units, but only has IDE and memory expansion potential. There is an upgrade kit (basically a couple of chips and a SCSI cable) which offers the potential of the full LC version. Both LC and EC versions are available for the A500 external and the A1500/A2000 Trifectas. This upgrade kit is specific to each version – the SCSI controller chips are different for the two versions.



Bung an ICD Trifecta in your A2000, insert the floppy disk and you'll be confronted with this screen.

Trifecta 500 LC

SPEED

SCSI 2 is the fastest hard drive standard you can get – and the other's are nippy too.

DOCUMENTATION

Quite detailed but both the A2000 and A500 versions are included – can be a little confusing.

ACCESSIBILITY

Very good set-up utilities and various examples are included.

FEATURES

No other hard drive can do quite what this one can. Plenty of extras

VALUE

Outstanding really, considering the potential of the machines.



92%

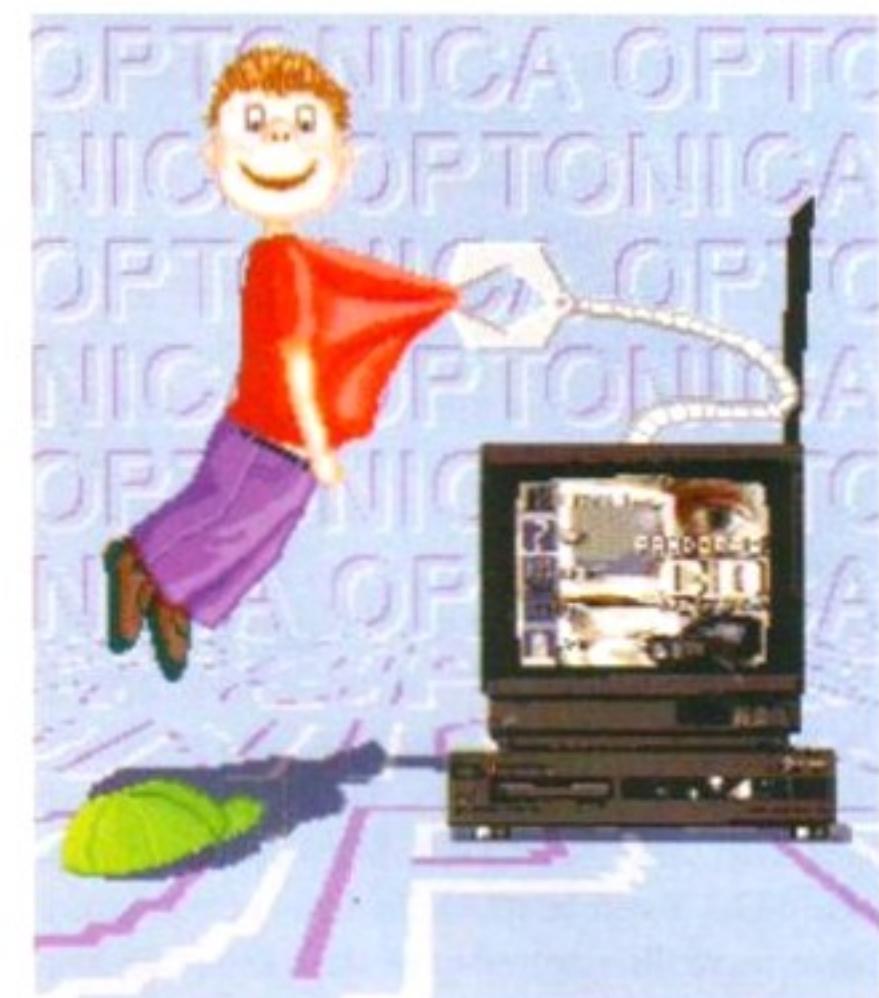


Richard Baguley investigates a multimedia CD that contains over 2,000 pieces of clip art and 99 different sounds. And it's all available for under fiver.

PANDORA'S CD
is available
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If you want to know where to find interesting modern statues in Milton Keynes, the *Point of Information* demo about the town could be useful.



A still from the rather good animated intro sequence, where a young boy is initiated into the dark rites of CDTVism.

Pandora's CD

Multimedia ■ £4.99 ■ Optronica

MULTIMEDIA IS ONE of these things that is constantly being touted as the Next Big Thing, but never really seems to arrive. However, despite its lack of general acceptance, several companies have been quietly working with this medium. Among these are Optronica, who have been producing both multimedia products and software for the past few years now.

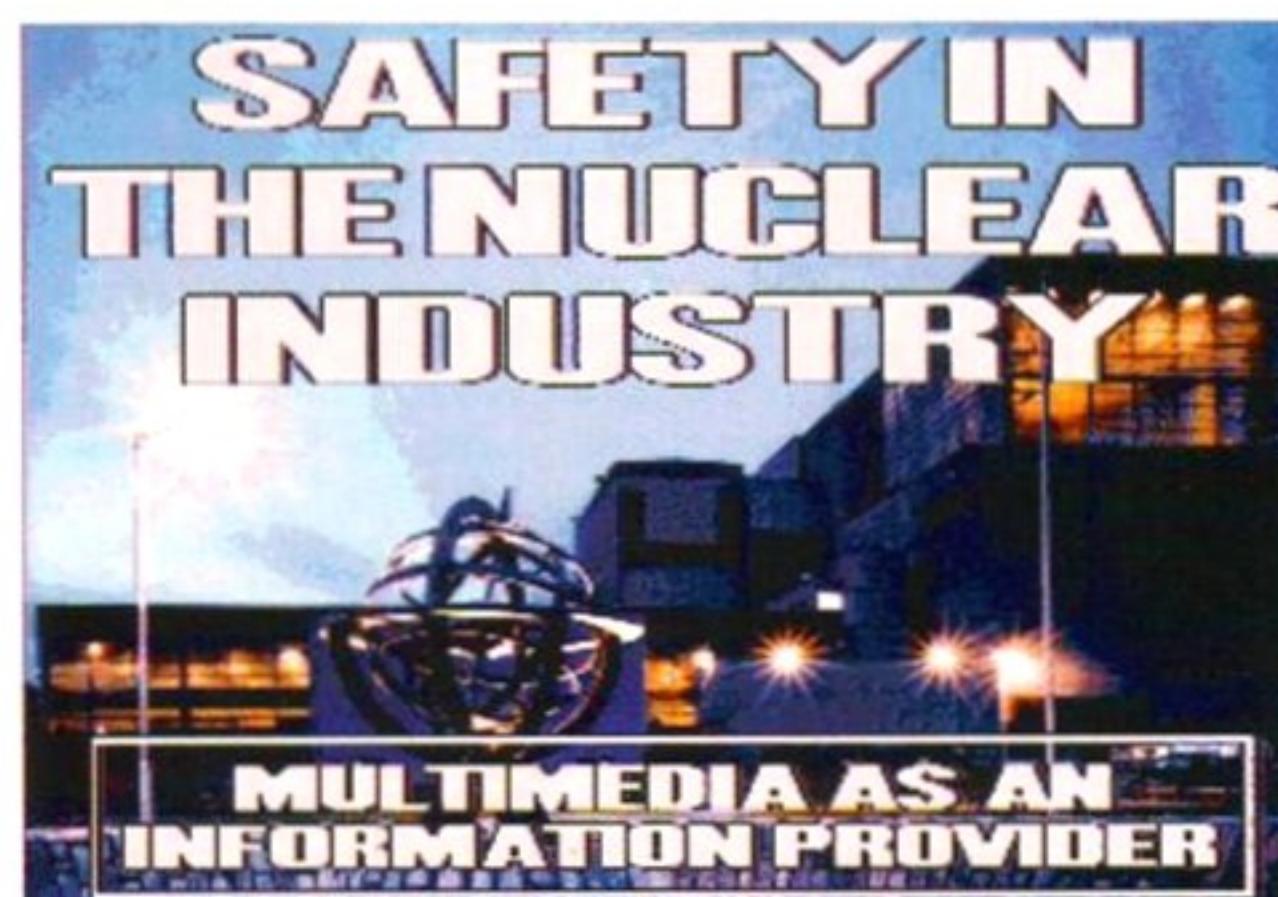
This disk is basically a promotional exercise for the company, but don't let that put you off. It's divided into two sections, the first (and probably the most useful) of which is the clip art section, which contains over 2,000 pieces of colour clip art, with subjects ranging from electric ovens to toilets. Most of these are fairly simple, but they could be useful either in their own right or as a basis for creating your own drawings.

Various images are also on the disk, with 26 textures suitable for using in ray tracing and a variety of scanned photographs of subjects that range from people to helicopters. Also included are 99 sounds of various types – from aerosols to wind. All of these are saved as standard IFF files, so you can copy them straight off Workbench, although the CD includes software which enables you to view and save the files to floppy disk by pressing one button. There are four *SoundTracker* songs included on the disks, which cover a variety of styles. Although these are not overly inspiring, some of the accompanying graphics are nice, including a rather good 15Mb *Vista* produced animation.

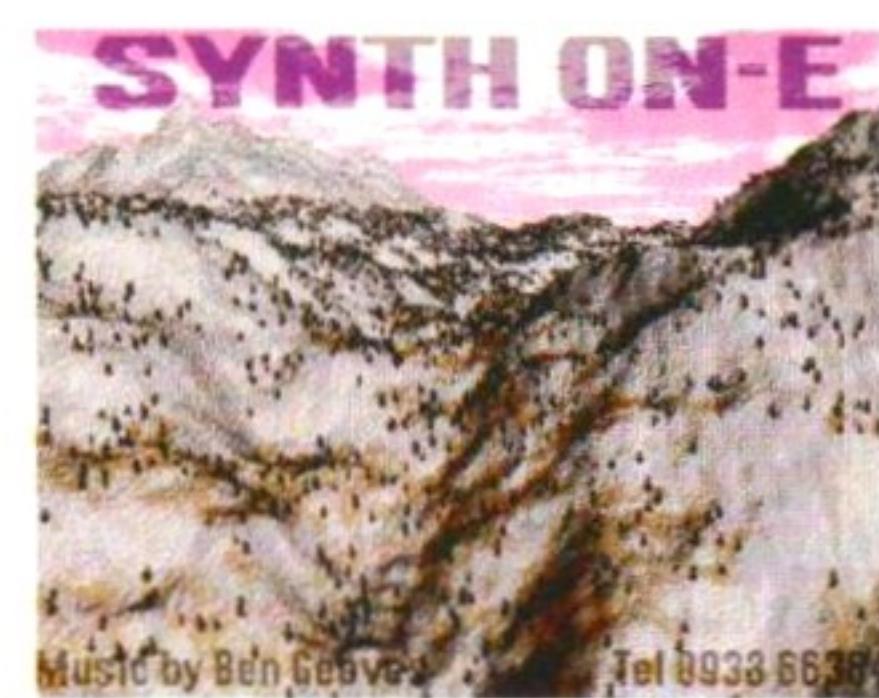
The other part of the disk contains six demonstration multimedia programs on such diverse subjects as safety precautions for



A still from one of the educational games on the disk. This is accompanied by an embarrassing voice saying 'How many plums can you see?'.



Now I could put something witty in here about nuclear power and safety. But instead, I'll just say this is from one of the multimedia demos on the disk.



Four music tracks are included on the CD, including one called *Synth on E's* which has an accompanying 15Mb *Vista* animation.

nuclear power stations and Milton Keynes. None of these are particularly huge, but they're all well thought out and show the sort of thing you can do with multimedia concepts and the vast storage space of a Compact Disc. They all include digitised speech and graphics, and some include 1/4 screen video, which is rather effective, especially in the *Insight Technology* demo.

If you're interested in what multimedia can do, and you want a good selection of clip art images, then this disk is well worth investigating. After all, for £4.99, how can you possibly go wrong?

Pandora's CD

It's a good demo CD, and over 2,000 clip art images and 99 sounds can't be bad for a fiver. Some of the interactive multimedia programs are quite interesting, if you're lucky (sorry? – Ed) enough to live in Milton Keynes.



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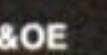
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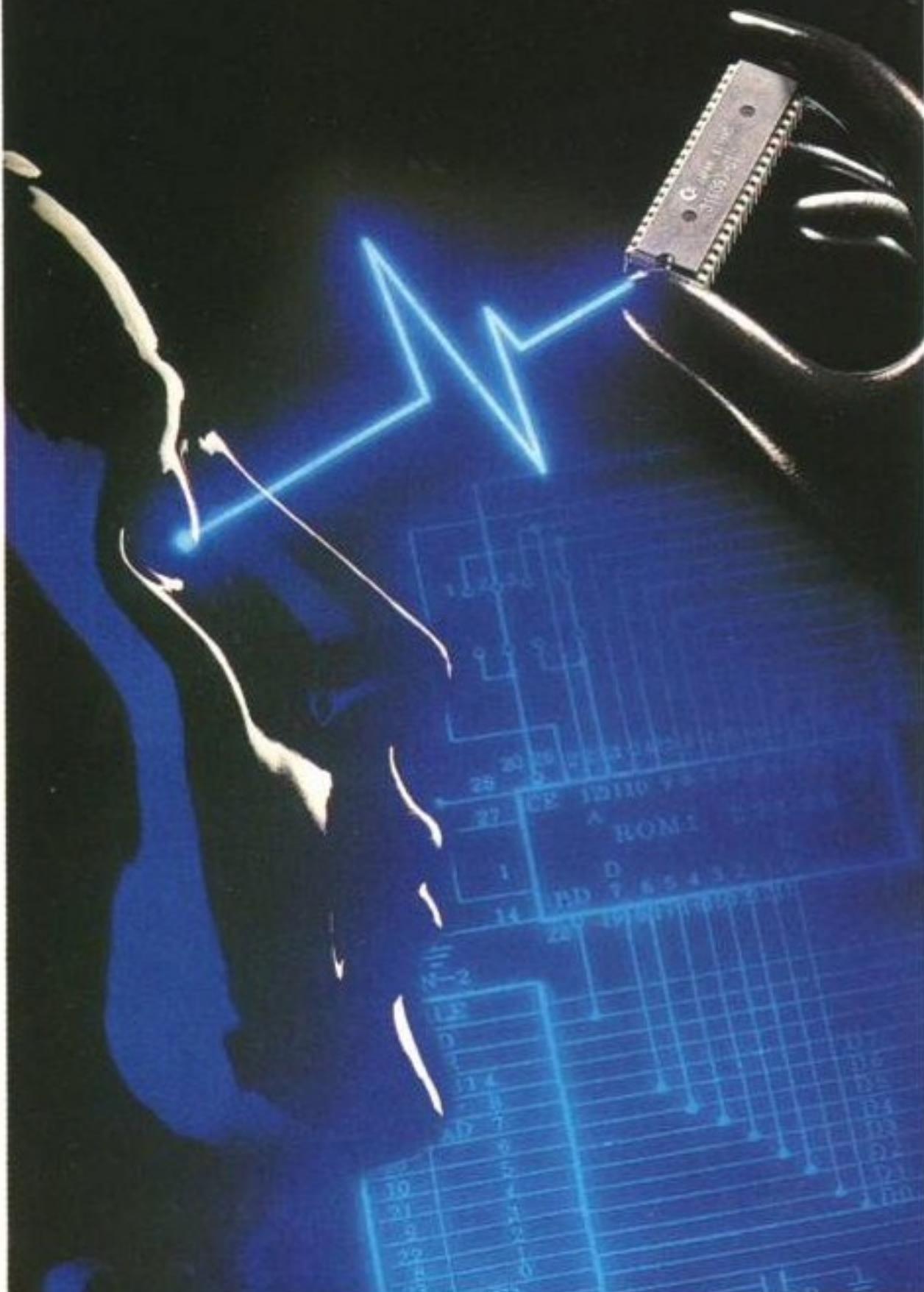
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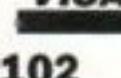
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Pat McDonald drives his Amiga to the limits with a hot new piece of hardware.

UP UNTIL NOW, if you wanted to add multiple hard drives to your Amiga, you had to invest in SCSI (Small Computer Systems Interface) based systems. These allow up to seven devices to be daisy chained together, to give huge amounts of storage. SCSI hard drives are expensive, though, compared to other types – and there's another snag.

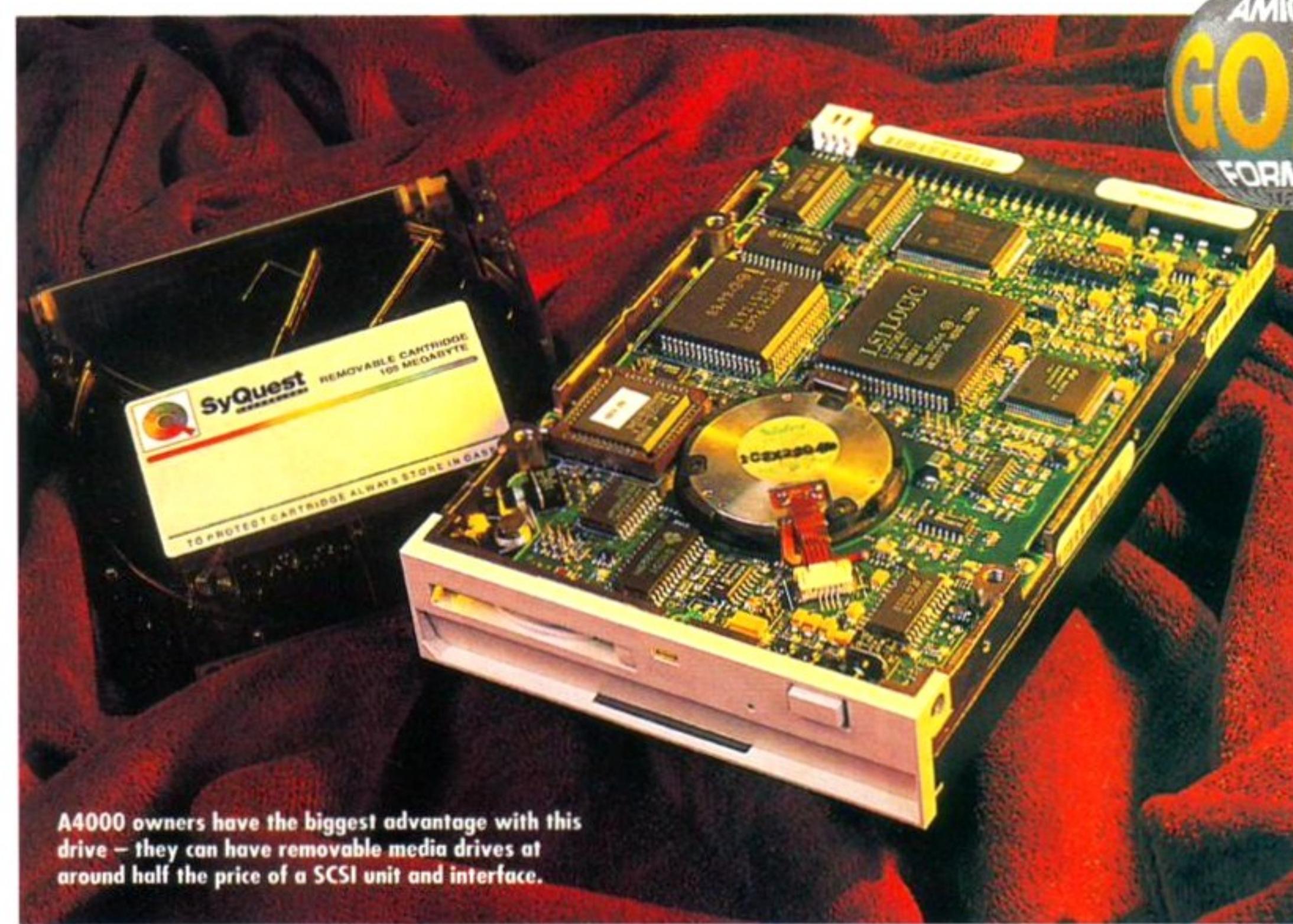
The trouble is, the new AGA Amigas (A4000 and A1200) don't allow you to connect SCSI drives as standard – they lack a SCSI controller. Instead, they support IDE (Integrated Drive Electronics) type drives. IDE units are cheaper than SCSI drives, although they are generally slower and only allow for two hard disk units to be connected at once.

Luckily, SyQuest have just introduced this unit. It doesn't look particularly special – just like a floppy drive with a slightly larger hole than usual, and an IDE connector at the back. But it doesn't take floppies – it takes hard disk cartridges which can store up to 105Mb each.

These are not magneto optical in nature. Magneto-optical disks are a cross between conventional hard drives and Compact Discs. They use a laser beam to heat up the surface of the disk, leaving a binary code. Then a conventional magnetic head reads the disk. Which means that, although they compare very well with hard disks when reading data, they are much slower when writing data to a disk. This unit does not have that problem at all.

As it is, this IDE drive is only really suitable for use in an A4000. Simply mount it in the spare floppy drive bay, plug it to the IDE connector and use *HDTToolBox* to format it. Although, in theory, the same procedure will work on an A1200, in practice the A1200 cannot write data on to the drive consistently. As we went to press, the manual was not available, but if it's as good as the 120Mb SCSI unit's reviewed in AF 44, it will be thorough.

A1200 owners will have the option of using this SyQuest. Power Computing plan to produce it in an external version which will be more expensive. So (as usual) the expansion will be more expensive to 'domestic' Amiga owners than for 'serious' Amiga owners.



A4000 owners have the biggest advantage with this drive – they can have removable media drives at around half the price of a SCSI unit and interface.

SyQuest IDE Drive

£500 ■ SyQuest Technology

Things haven't changed that much from the A500/A2000 days!

Speaking of the A500 and A2000, owners of those machines can use the SyQuest, but it's going to be a bit of a bodge for the former. The Trifecta (reviewed on page 121) can control the SyQuest IDE drive very well. On the A2000, just put it in the spare floppy bay and connect it to the ICD board. A1500 owners already have two drives, though.

The tricky bit for A500 owners is connecting it to the Trifecta and mounting it – you can't stick it inside a Trifecta (because then you can't swap cartridges) or inside the A500 (because the only place to put it is where the floppy disk drive is). Perhaps Power will also do this drive in an external expansion box for such people, but that will depend on demand.

OK, this is a cartridge hard drive (often called a removable media drive). AmigaDOS doesn't really support such units, although the Diskchange command deals with it. Don't

expect to throw cartridges in and out of it willy nilly – you need to set up your system to deal with loads of different cartridges.

So it's not a perfect drive, but it wasn't that long ago that a 105Mb hard drive cost as much money. At about £500 (Power have not pinned the price point yet) this unit represents extremely good value for money.

But the most important point is that A4000 owners do not have to shell out for a SCSI interface board just to use removable media drives. In fact, this unit costs about half the price of a SCSI unit plus SCSI interface – and that's got to be good news. This looks like it is the hottest drive to hit the Amiga scene in 1993 – I wonder what other sizes SyQuest are planning?

Syquest IDE drive

SPEED

The fastest removable hard disk that I have ever seen.

DOCUMENTATION

Very minimal as yet – but there's no reason why it isn't as good as the last one I saw.

ACCESSIBILITY

The only snag is setting up an icon for Diskchange.

FEATURES

Removable media for AGA Amigas – a market niche just got filled.

VALUE

It's much, much cheaper than the equivalent SCSI system.



95%

SEALED CARTRIDGE FORMATS

The main difference between a hard disk and a floppy disk is that a hard disk is vacuum sealed into the drive. This means that airborne rubbish like hair, smoke particles and dust cannot get into the drive. Which means that the heads which read and write information can be positioned to within a tiny fraction of an inch above the magnetic disk.

Therefore the data can be written on to a much smaller area of the disk, giving much more storage capacity than a similar sized floppy. One manufacturer (Seagate) likes to use this analogy: imagine a jumbo jet flying one metre above the ground – and counting the blades of grass as it goes.

Removable media drives like this one are the obvi-

ous combination approach, and will (in mine and many other people's opinions) become extremely popular within the next five years.

Cartridge formats are like a floppy disk, in that you can put different cartridges in and out of it; and it's like a hard disk, in that you can put many millions of bytes of information on to each cartridge. Syquest are the world leaders in this area.

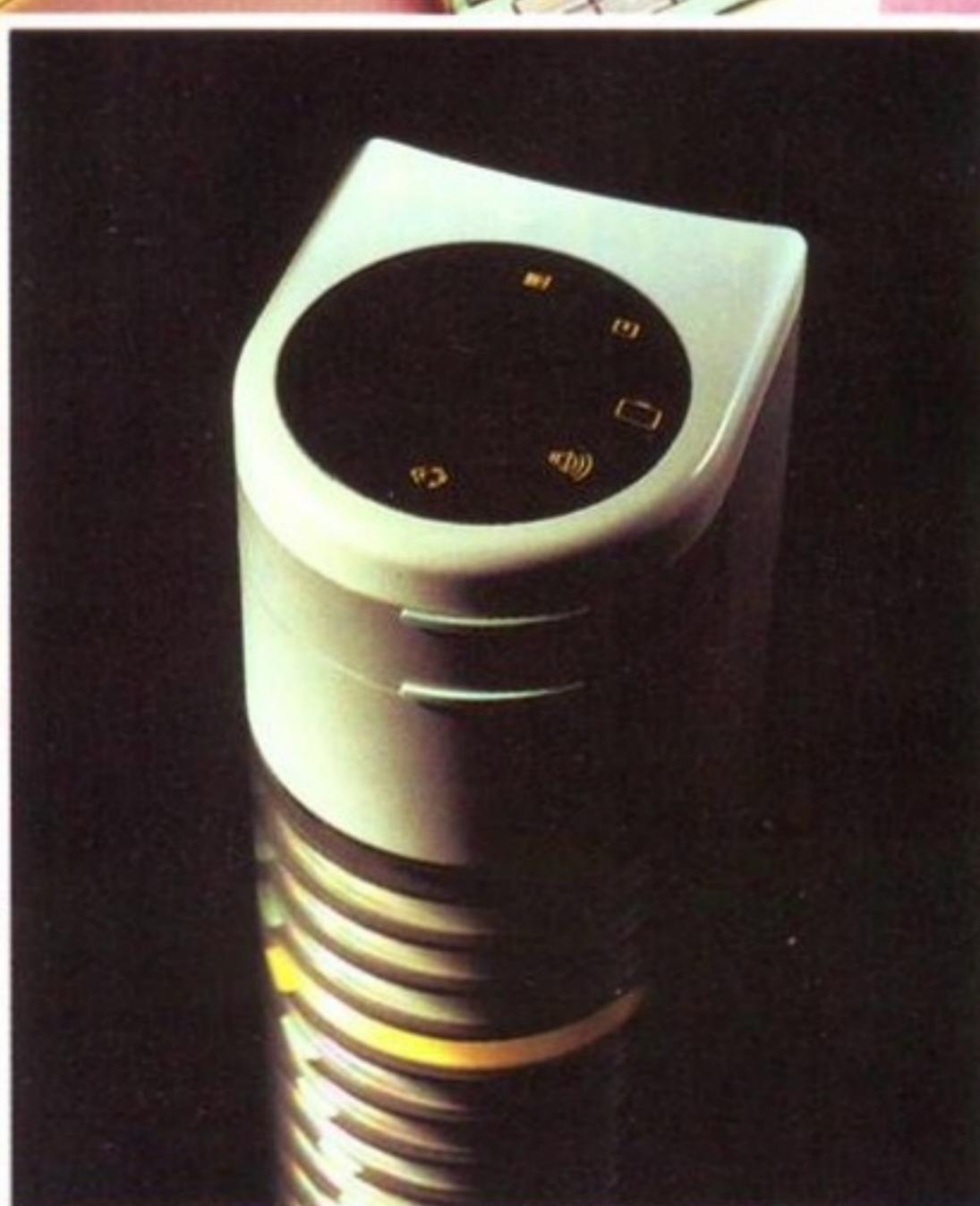
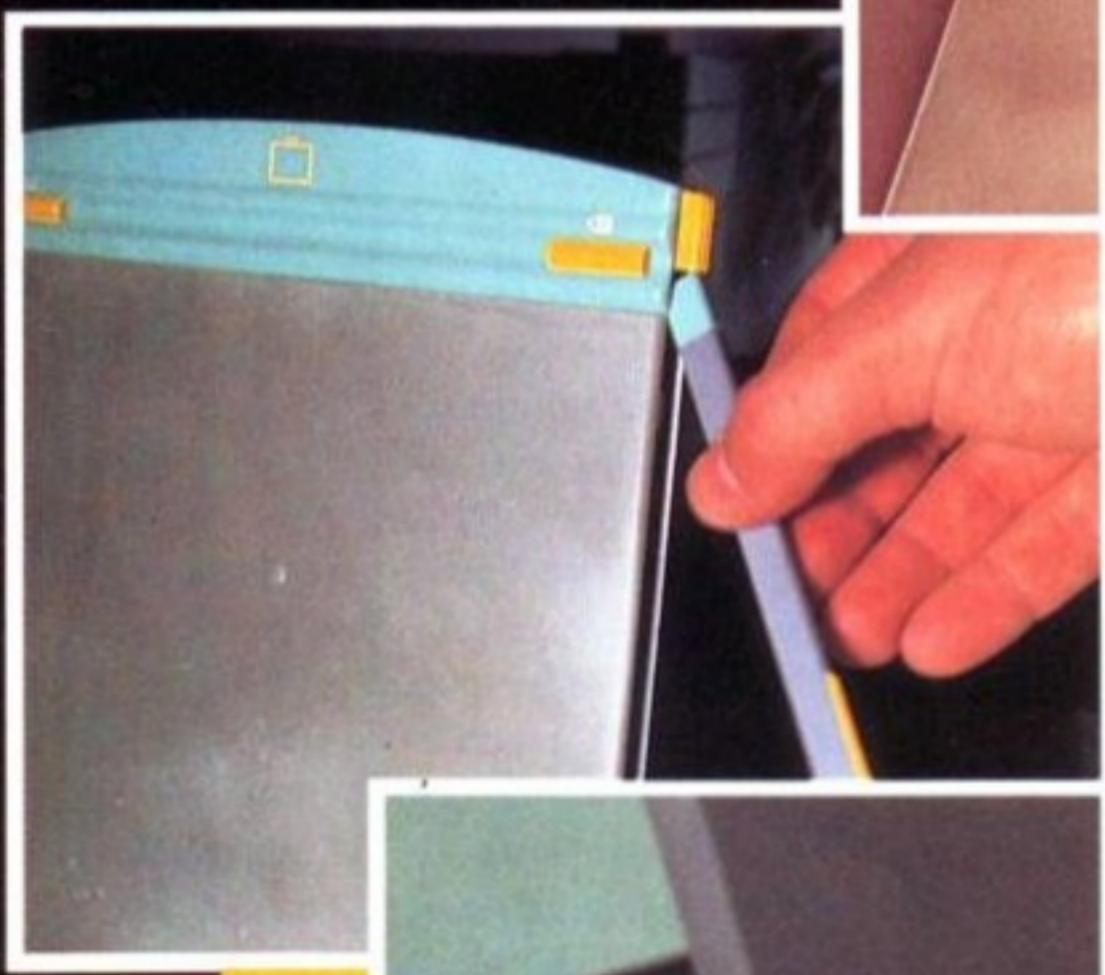
Don't think that you can mistreat technology like this and get away with it. You cannot use these drives on end or upside down – they tend to wipe cartridges when you do that. Also, when not using a cartridge, it's wise to store it away in its holder, to prevent that airborne pollution from knobbling it.

TOMORROW'S MACS



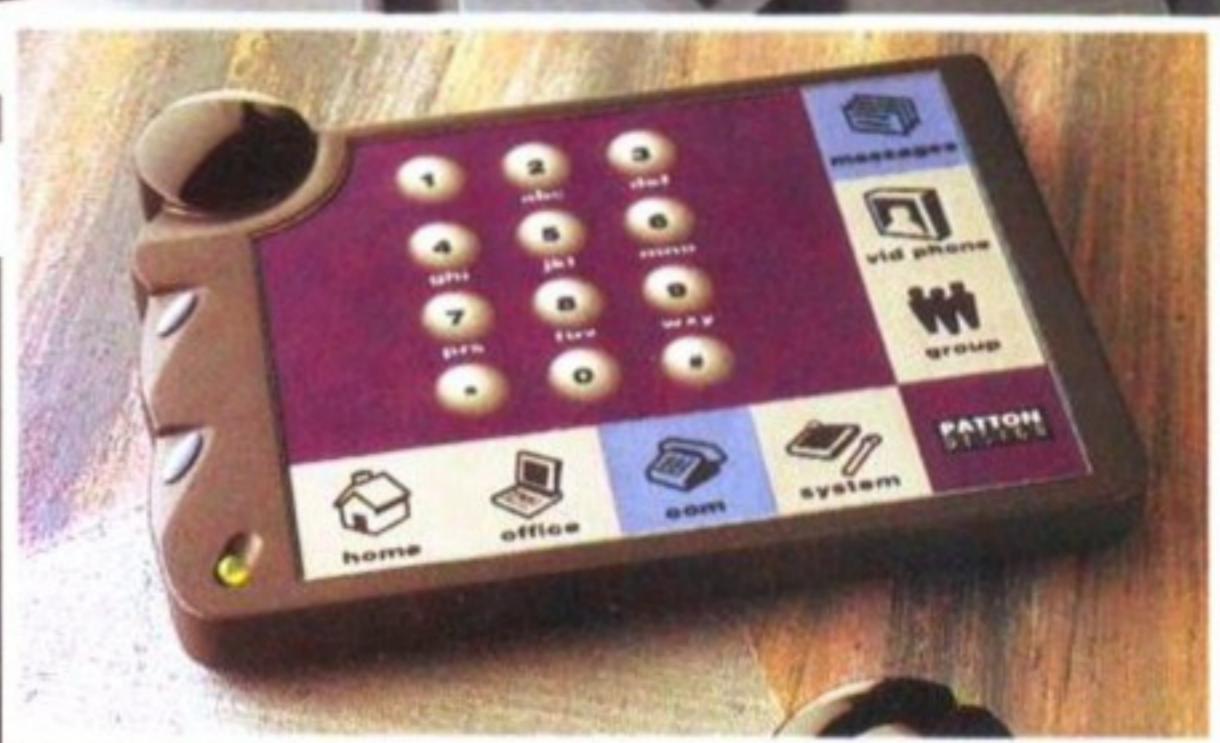
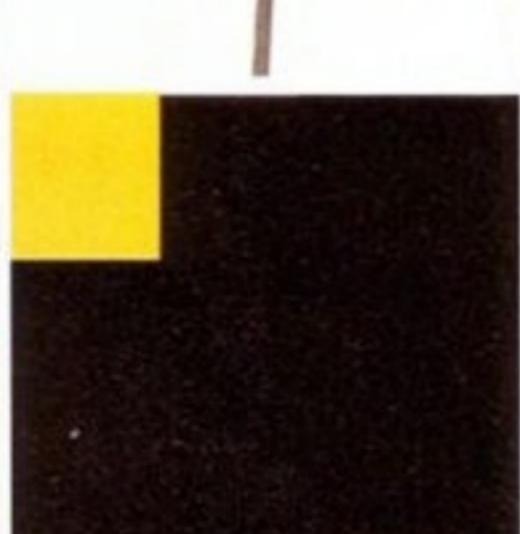
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- Command Vue IV Front Control Panel
- Ultra Quiet Mode - 43dB(A)
- Colour Printing Standard - Swift 240c, Colour Printing Optional - Swift 240
- FREE Silica Printer Starter Kit

SWIFT 240 MONO

RRP £339
STARTER KIT £49
TOTAL VALUE: £388
SAVING: £149
SILICA PRICE: £239

£239
+VAT £280.83 - PRI 2560

SWIFT 240C COLOUR

RRP £359
STARTER KIT £49
TOTAL VALUE: £408
SAVING: £149
SILICA PRICE: £259

£259
+VAT £304.33 - PRI 2571

192 CPS 136 COLUMN



- Citizen Swift 24x - 24 pin - 136 col
- 192cps Draft, 64cps NLQ
- 8K Printer Buffer + 4 Fonts
- Parallel Interface
- Graphics Resolution: 360 x 360 dpi
- Epson, IBM and NEC P6 Emulation
- Colour Option Available
- FREE Silica Printer Starter Kit

RRP £409
SILICA STARTER KIT £49
TOTAL VALUE: £538
SAVING: £239
SILICA PRICE: £299

£299
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FREE! STARTER KIT

WORTH: £49 SEE ABOVE

192 CPS 136 COLUMN

- Citizen Swift 90 - 9 pin - 80 column
- 240cps SD (10cps) 180cps Draft, 48cps NLQ
- 8K Printer Buffer
- 6 Fonts Built-in
- Parallel Interface
- Graphics Resolution: 240 x 216dpi
- Epson and IBM Emulation
- Auto Set Facility
- Ultra Quiet Mode - 45dB(A)
- Advanced Paper Handling
- Colour Printing Standard - Swift 90c
- Colour Printing Optional - Swift 90
- FREE Silica Printer Starter Kit

SWIFT 90 MONO

RRP £199
STARTER KIT £49
TOTAL VALUE: £248
SAVING: £99
SILICA PRICE: £149

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RRP £219
STARTER KIT £49
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SAVING: £99
SILICA PRICE: £169

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64 CPS 80 COLUMN

- Citizen PN48 Notebook Printer
- Non-impact Printing on Plain Paper
- 53cps LQ - 4K Buffer + 2 Fonts
- Rear and Bottom Paper Loading
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CITIZEN PN 48

RRP £325
TOTAL VALUE: £325
SAVING: £126
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WORTH: £49 SEE ABOVE

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ES

The Best Word Publish (Amiga Forma)

Wildlife

Report

The Tiger

Large striped cat of Asian jungle and mountain regions. One of the largest of the big cats, the tiger is 3-4 m. (10-13 ft) long, including a tail 1 m. (3 ft) long, and weighs 227-272 kg. (500-600 lb.). Both sexes are immensely strong, enabling them to bring down and overcome animals the size of buffaloes. Their main prey is deer, antelope, wild pigs and bushbucks.

Lacking the stamina for a prolonged chase, tigers rely on their striped markings to conceal their movements as they silently creep up on their victims before making a sudden rush from behind. They kill by first knocking the animal down with a blow of the forepaw, or pulling it down with the claws, then suffocating it with a powerful bite at the neck or throat. Tigers swallow meat in large chunks, using their teeth to cut rather than to chew, and eating up to 22.5 kg. (50 lb.) of meat in a single meal.

Tigers spend the day sleeping or resting and emerge at dusk to hunt. Males are usually solitary animals, except during the breeding season. Each male marks off a territory of from 65-650 sq. km. (25 sq. miles), which contains several females and which he defends against other males, marking the boundaries by spraying a mixture of both his urine and scent.

Tigers once ranged all the way from China to Turkey, but today their range are largely confined to India and South-east Asia, with smaller populations in China, Siberia and Turkestan.

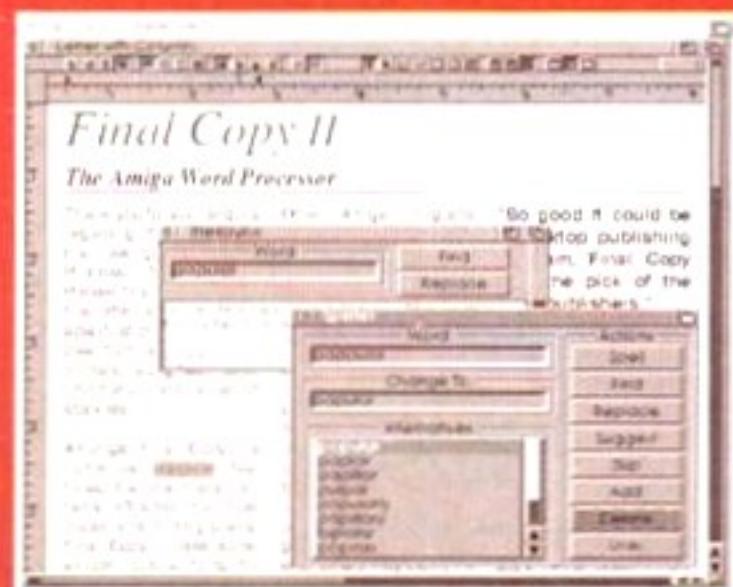
Region of Habitat

Final Copy coined the phrase "Perfect Printing on any Printer".

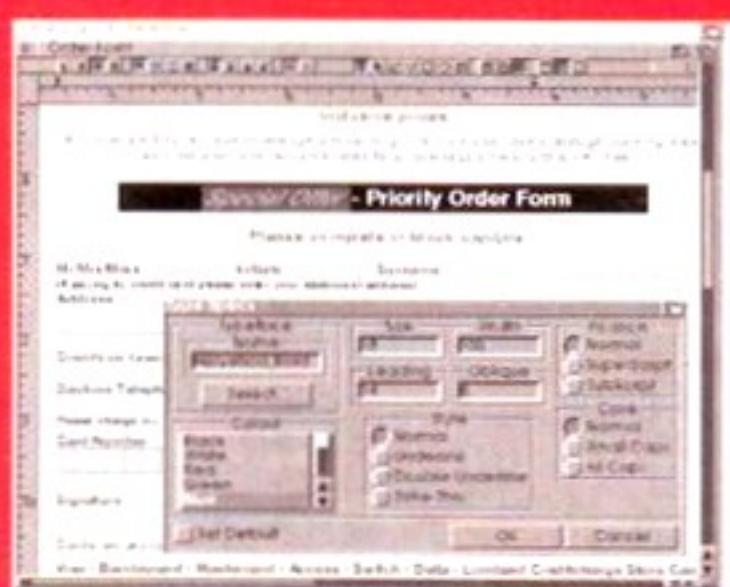
We mean it - this document proves it!

Created in Final Copy II and printed on a standard 24-pin Citizen Swift, it shows a small number of Final Copy II's features: Smooth Scaleable Outline Fonts, Multiple Columns, Drawing Tools for Boxes, Borders, Shadows, Lines and Arrows, White-Out Text, Text Printed over Graphic Images, Text Obliquing, Auto-Flow Text around Graphics and of course, Import of Colour and Mono Graphics Pictures.

Word Publishers go beyond simply producing normal letters and documents (at which Final Copy II naturally excels) and progress into a world where *how the whole document looks* is just as important as *what it says*. Admittedly, this can be achieved with Desk Top Publishers, but they can't easily be used as Word Processors, especially when a good looking letter needs creating quickly - they're far too cumbersome. This is where Final Copy II offers the perfect balance between the two requirements. Ease and speed of use, combined with complete control and perfect final printed presentation.



Document creation is so simple with 28 On-Screen Buttons for routine formatting and navigating commands, like Auto-Hyphenation. With *true* WYSIWYG display, you can even edit whilst your pages are magnified up to 400% (or reduced). Long documents are supported with Title/Master Pages, Style Sheets, Left/Right Page Binding Offset and Auto Numbering. Because your text needs to be perfect, the British-English Collins Proximity Speller combined with the Thesaurus (for that added inspiration) help you to produce the precise, printed page.



Compugraphic, Adobe Type 1 PostScript or Nimbus Q PostScript? If you *want* lots of fonts, you can *have* lots of fonts! Final Copy II can use thousands of superior Adobe Type 1 or Nimbus Q fonts (the same as those used on professional publishing systems). Both these types are PostScript fonts, but unlike all other Word Processors you don't need an expensive PostScript laser to use them! Final Copy II *will* print them on PostScript lasers, *or* any graphics capable printer. This includes the dot-matrix or ink-jet you probably already own. Even if you have your own Compugraphic* font library

you'd still like to use, Final Copy II is fully compatible, outputting to any graphic printer. Final Copy II is unrivalled in its range of fonts supported, and as you can see here, you have complete control over text formatting. When using the outline typefaces included, or any additional fonts, they'll output perfectly - no matter what size they're scaled to - with absolutely *no* jaggies! Opening multiple documents also allows editing whilst printing in background mode (free memory dependent).

Available from all good Amiga Software Dealers,
or from SoftWood Europe - please phone for a list of nationwide stockists.

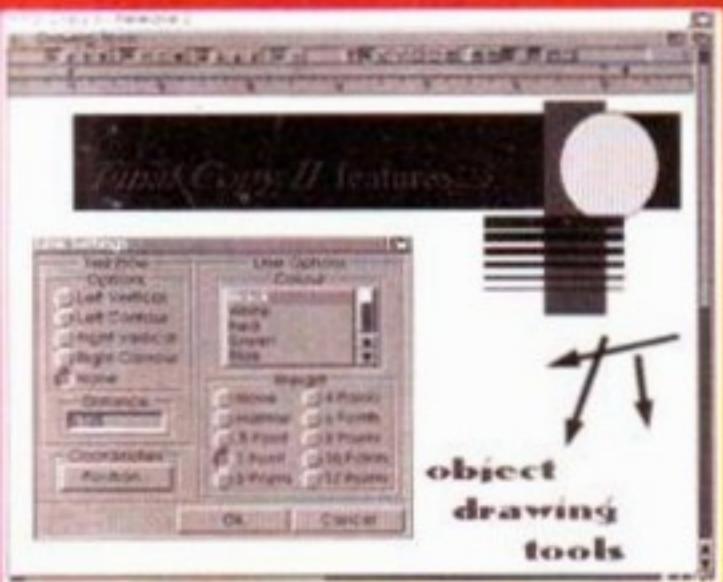
Program of its Type (its words not ours)



Copy II

Release 2 available now!

Complete control over how your documents look, now you have it! Final Copy II incorporates: On-Screen Drawing Tools for generating boxes, borders, and lines or arrows at any angle, Multiple Newspaper Style snaking columns, combined with the unique ability to print the same PostScript quality outline fonts - on absolutely *any* printer in portrait or landscape. These all mean that no matter what you may have thought, no other Amiga Word Processor has all the capabilities that Final Copy II users now simply take for granted!



The almost endless list of features includes On-Screen Object Drawing Tools (no more importing of borders from drawing packages to frame graphics or reverse-highlight text) with selectable rulers to aid precise positioning. Text Auto-Flows around graphic objects and imported pictures, which can be placed anywhere, scaled and cropped, with no loss of printing quality. Text can also be printed actually *over* graphics (refer to 'The Tiger' heading on our document). No other Word Processor for the Amiga offers all this. (*Compugraphic fonts require Kickstart 2 and Workbench 2.1 or later, with Final Copy II. They will not output on PostScript printers from any Word Processor - and would always be our second choice. All fonts used in Final Copy II can print to the highest resolution that the printer will output).

Amiga Format think we have the Best Word Publisher. We'll show you why with a list of features that users tell us are important (below).

If you'd like to know who's also chosen Final Copy, Commodore specify it as an option with some of the most powerful Amigas available in the United States. What better recommendation could you have?

	Feature	Wordworth 2	Final Copy II
Fonts and Printing	Compatible with Standard Amiga Workbench 2 Compugraphic Fonts	YES	YES, But would Suggest use of Better PostScript Fonts
	Compatible with Standard Adobe Type 1 and Nimbus Q Scaleable Postscript Fonts	NO/NO	YES/YES
	PostScript Font Outlines on all Printers	NO	YES
	Maximum Number of PostScript Fonts	Limited to a total of 35	Infinite
	Download Extra Fonts to PostScript Printer	NO, Can't download extra fonts	YES, Automatic
	Landscape (Sideways) Printing on all Printers	NO	YES, Automatic
	Reclaim Printing Resolution (Quality) of Scaled (Reduced and Enlarged) Graphic Images	NO	YES, Same High Quality when Reduced and Enlarged
	Print any Text or Graphic in Colour	YES	YES
	No. of Colours Printed in Imported Pictures	Limited by Screen Mode Used	Output as Original Image
	Graphics Printing (HAM & IFF ILBM)	Good if Graphics not Scaled	Always Best Possible
Graphics	Text Width (Compress and Expand)	NO	YES
	Variable Text Obliquing (Slanted Text)	NO	YES
	Both Positive and Negative Attributes	NO	YES
	Box, Rounded Box, Circle, Oval, Line, Variable Border & Arrow Drawing Tools	NO	YES
	Crop (Trim) to Size Imported Graphics	NO	YES
	Supports A1200/4000 AGA Chipset	YES, 256 On-Screen Colours	YES, 256 On-Screen Colours
	Create Border around Graphics and Pictures	NO	YES
	British-English Spelling Checker	YES, Collins Proximity with Legal & Medical Supplements	YES, Collins Proximity with Legal & Medical Supplements
	British-English Thesaurus	YES, Collins 826000 Synonyms	YES, Collins 826000 Synonyms
Editing and Formatting	Page View Magnifications and Reductions	One Fixed Print Preview	7 Variable stages - 25% to 400%
	Edit Document while Magnified or Reduced	NO	YES
	Search & Replace (150 words in 9000, 7 Pages)	61 Seconds (On Amiga A1200)	7 Seconds (On Amiga A1200)
	Index and Table of Contents	YES, Automatic	NO, Requires Manual Entry
	Multiple Newspaper Style Snaking Columns	YES, 2 to 32	YES, 2 to 6
	Style Sheets, Master Pages, Title Pages	NO	YES
	Uses Standard Amiga Clipboard for Cutting & Pasting to and from Different Applications	NO	YES
	Small Caps Typographical Control	NO	YES
	Conforms to Commodore's Amiga Standard 'Look & Feel' Guidelines	NO, Non Standard User Interface	YES
	On-Screen Maths (Column Addition)	NO	YES
	Import ASCII Text from any Word Processor	YES	YES
	UK Registration, Upgrade and Support	YES	YES
General Features	Free Memory Required	1.5Mb. Minimum More Recommended	1Mb. Minimum More Recommended
	Free Ongoing Technical Phone Support	NO, £38 per year after 60 days	YES, Free of Charge
	Recommended Retail Price	£129.95	£99.95

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VIRUS DETECTION

Comprehensive virus detection and removal features to protect your software investment. Works with all presently known viruses.

NEW BURST NIBBLER

Now this super disk copier program is built into Action Replay Mk III. Just imagine a superfast, efficient disk copier program at the press of a key - no more waiting.

SAVE PICTURES AND MUSIC TO DISK

Pictures and sound samples can be saved to disk. Files are saved directly in IFF format suitable for use with all the major graphic and music packages. Samples are displayed as screen waveform.

NEW PAL or NTSC MODES SELECTABLE

Useful for removing ugly borders when using NTSC software. (Works only with newer Agnus chips).

NEW SLOW MOTION MODE

Now you can slow down the action to your own pace. Easily adjustable from full speed to 20% speed. Ideal to help you through the tricky parts!

MANY MORE INSTANT CLI COMMANDS

like Rename, Relabel, Copy, etc.

NEW RESTART THE PROGRAM

Simply press a key and the program will continue where you left off.

FULL STATUS REPORTING

At the press of a key now you can view the Machine Status, including Fast Ram, Chip Ram, RamDisk, Drive Status, etc.

POWERFUL PICTURE EDITOR

Now you can manipulate and search for screens throughout memory. Over 50 commands to edit the picture plus unique on screen status "overlay" shows all the information you could ever need to work on screens. No other product comes close to offering such dynamic screen handling of frozen programs!!

JOYSTICK HANDLER

allows the user to select Joystick instead of Keypresses - very useful for many keyboard programs.

MUSIC SOUND TRACKER

With Sound Tracker you can find the complete music in programs, demos, etc. and save them to disk. Saves in format suitable for most track player programs. Works with loads of programs!!



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FREEZER-UTILITY CARTRIDGE

AUTOFIRE MANAGER

From the Action Replay III preference screen you can now set up autofire from 0 to 100%. Just imagine continuous fire power! Joystick 1 and 2 are set separately for that extra advantage!

NEW

IMPROVED RAM EXPANSION SUPPORT

Now many more external Ram Expansions will work with all Action Replay III commands.

DISKCODER

With the new "Diskcoder" option you can now 'tag' your disks with a unique code that will prevent the disk from being loaded by anyone else. "Tagged" disks will only reload when you enter the code. Very useful for security.

NEW

SET MAP

allows you to Load/Save/Edit a Keypad.

PREFERENCES

Action Replay III now has screen colour preferences with menu setup. Customise your screens to suit your taste. Very simple to use.

DISK MONITOR

Invaluable disk monitor displays disk information in easy to understand format. Full modify/save options.

IMPROVED PRINTER SUPPORT

including compressed/small character command.

NEW

DOS COMMANDS

Now you have a selection of DOS commands available at all times - DIR, FORMAT, COPY, DEVICE, etc.

NEW

FILE REQUESTER

If you enter a command without a filename, then a file requestor is displayed.

DISK COPY

Disk Copy at the press of a button - faster than Dos Copy. No need to load workbench - available at all times.

PLUS IMPROVED DEBUGGER COMMANDS

including Mem Watch Points and Trace.

NEW

BOOT SELECTOR

Either DFO or DF1 can be selected as the boot drive when working with Amiga Dos disks. Very useful to be able to boot from your external drive.

PLUS A MACHINE CODE FREEZER MONITOR WITH EVEN MORE POWER!!

EVEN MORE FEATURES INCLUDING 80 COLUMN DISPLAY AND 2 WAY SCROLLING:-

- Full M68000 Assembler/Disassembler
- Full screen editor
- Load/Save block
- Write String to memory
- Jump to specific address
- Show Ram as text
- Show frozen picture
- Play resident sample
- Show and edit all CPU registers and flag
- Calculator
- Help command
- Full search feature
- Unique Custom Chip Editor allows you to see and modify all chip registers - even write only registers.
- Notepad
- Disk handling - show actual track, Disk Sync. pattern etc.
- Dynamic Breakpoint handling
- Show memory as HEX, ASCII, Assembler, Decimal
- Copper Assembler/Disassembler - now with suffix names

REMEMBER AT ALL TIMES YOU ARE INTERROGATING THE PROGRAM IN IT'S "FROZEN" STATE WITH ALL MEMORY AND REGISTERS INTACT - INVALUABLE FOR THE DE-BUGGER OR JUST THE INQUISITIVE!

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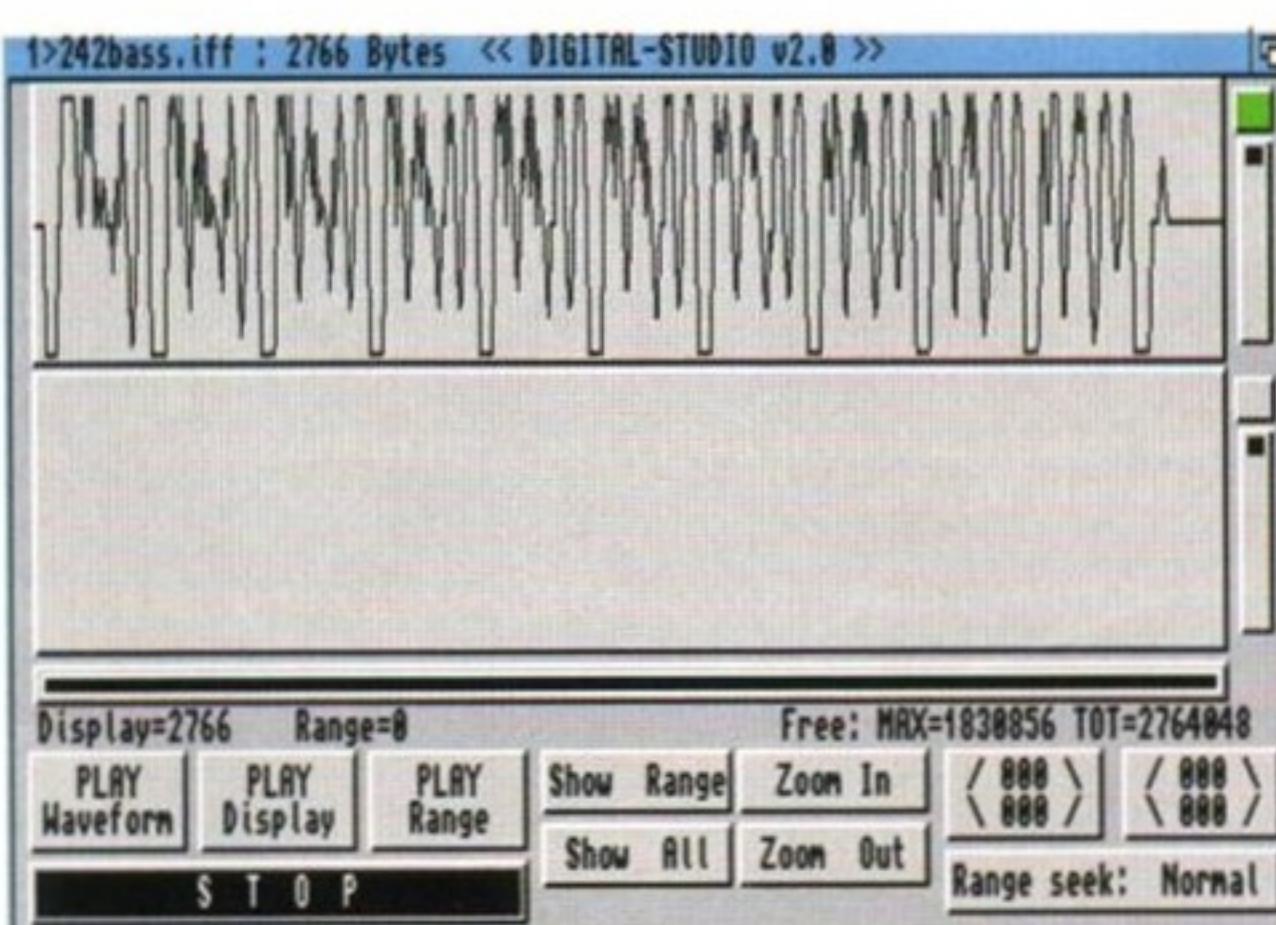
form. There is a sequencer as well, but it's only one-track and therefore not really worth mentioning. (If you want to sequence your samples together, use *ProTracker* from last month's Coverdisk.)

Real-Time Sound Processor III is an effects processor package which makes use of the sampling cartridge. If you load up an effect, then play music into the cartridge, the effect will be applied to the music and then output from the Amiga. This is similar to the many professional effects units which can cost hundreds of pounds.

Obviously the quality leaves a little to be desired when compared to more professional gear, but for a beginner making music this package certainly teaches a thing or two about how effects actually work. Each of the 35 effects are accompanied by a schematic diagram which shows the path of the sound through the effect (see picture left). Each component of the effect is labelled, and the label is repeated on the right side of the screen along with a sliding bar which adjusts the value of the component.

The only thing which lets the package down slightly is the manual. Written by the Italian company Adept Development who created the package, it explains the basics reasonably well, but it doesn't even attempt to explain some of the more detailed techniques. For example, the enveloper effect has an ADSR unit, and while it tells you what an envelope is, it doesn't really explain ADSR apart from mentioning the words Attack, Decay, Sustain and Release in passing. This could have been so much better with just a little more care.

If you only want a sampler then you can buy one for under £30, but The Home Music Kit offers more than that, and as a kit it is ideal for an introduction to electronic music.



This is the sampling screen. In the centre, the waveform window displays the sample, while underneath the control buttons offer different options.

all pretty simple stuff, as long as you know how to use a cassette recorder!

When the sound has finished recording, the waveform is displayed on the screen. You then use the mouse to remove unwanted bits of the sound, cut and paste parts of the sample, or loop certain sections. When you have the sound you want, you can save it to disk in IFF

HOME STUDIO KIT
is available from
Power Computing
on 0234 843388

HARDWARE – WHAT'S INSIDE THE BOX

The two cartridges are built to a very high standard. Opening up the plastic cases reveals circuit boards with surface mounted components – which are generally more reliable than their traditional counterparts. Surface mounting also reduces the need for hand-soldering, so reliability is increased even further.

There are some problems with connection, however. There are no attachment screws on the cartridges, which means that they can't be secured to the Amiga – this could cause problems if you need to move your machine. There's also a problem with the cases. The MIDI interface plugs into the Amiga's serial port, while the sampler plugs into the parallel port.

These two ports are next to each other on all Amigas, and on most Amigas this doesn't cause a problem. On the A1200, however, they are a little closer together than with older machines, and unfortunately there is no way of connecting the two cartridges to the Amiga at the same time. However, Power are looking into this problem, so if you have an A1200 check with them first.

The speakers which are supplied with the main kit are of the standard variety sold as add-ons for personal stereos. These take two AA batteries each, or you can use a separate power supply. The sound created is not bad – it's better than your monitor speakers, but don't expect miracles.

Home Music Kit

SPEED

Most operations are almost instant – including the sample manipulators.

DOCUMENTATION

Poor English in the manual, and it doesn't really explain all that you need to know.

ACCESSIBILITY

The sampler is a doddle. The effects processor is more complex, but on-screen diagrams help.

FEATURES

The usual features of a sampling package, coupled with an extensive range of effects.

VALUE

All the gear separately would cost you about the same – £70, so save yourself the bother.



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Citizen Swift 9	£3.40	£2.70	£15.30		
Citizen Swift 24/24E/224	£4.70	£2.70	£15.30		
Panasonic 1124	£8.50	£3.58	N/A		
Star LC-10	£4.47	£3.06	£6.70		
Star LC-20	£4.47	£3.06	N/A		
Star LC200	£6.11	£4.70	£12.30		
Star LC24 10/15	£5.58	£3.53	N/A		
Star LC24-200	£5.58	£3.53	£13.95		

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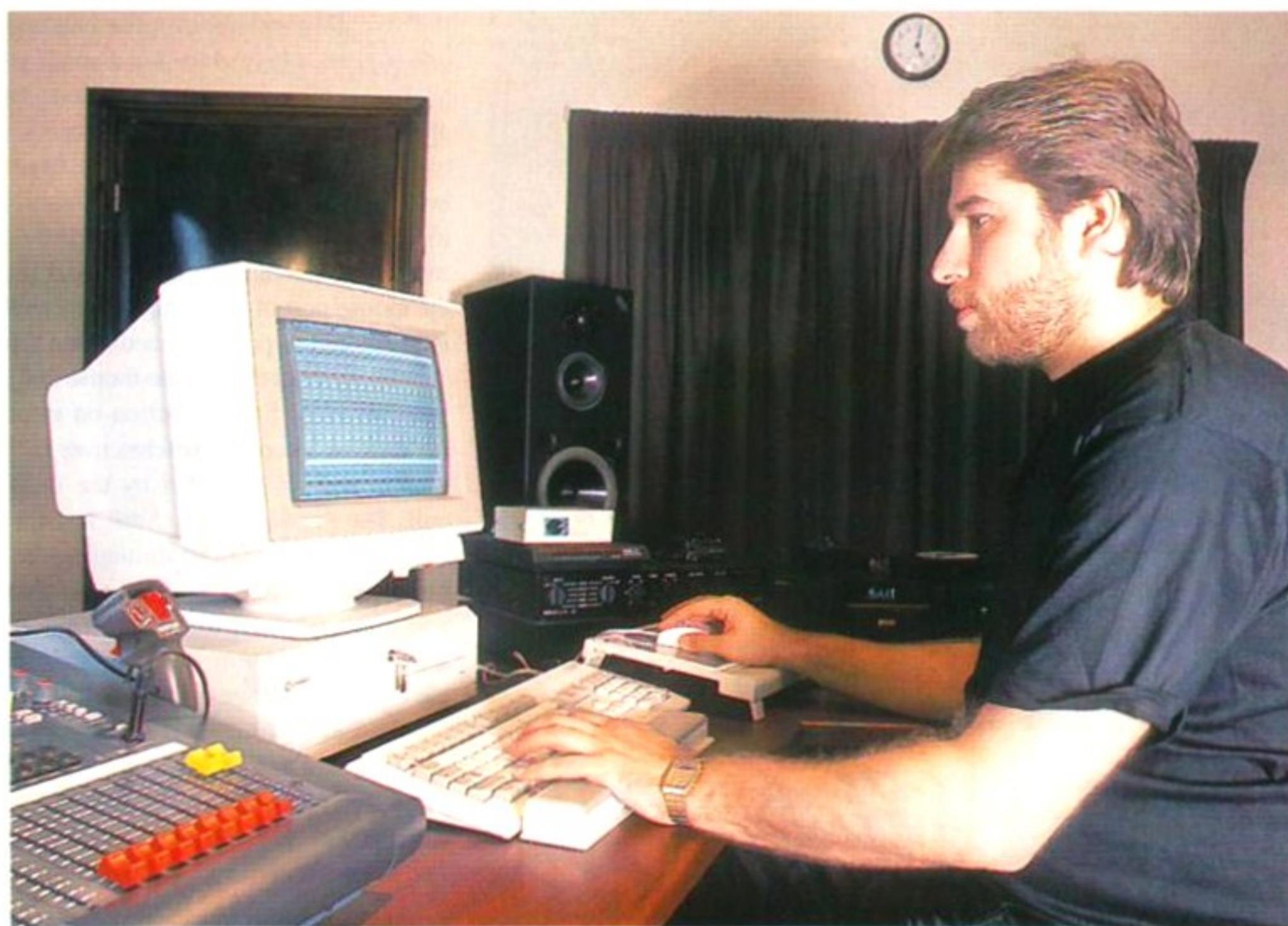
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Do you fancy yourself as a bit of a musician? Well if you produce music using your Amiga, whether you use ProTracker or Bars and Pipes Professional, then we've got the ultimate compo prize for you!

Greg Malcangi is the sound recordist for top percussionist Evelyn Glennie. And they've invited an Amiga Format reader to spend a whole day at their Heritage Studios; all you have to do is create a piece of music using your Amiga, and send it in to the address below!



Win a day in a top recording studio!

EVELYN GLENNIE IS the world's top percussionist (check out our News Special in AF47 if you don't believe us) and we're offering you the chance to spend a day at her Heritage recording studio, with Amiga sound recordist extraordinaire Greg Malcangi adding a professional touch to your own songs. And it doesn't stop there, we're also giving you a copy of Bars & Pipes Professional 2!

What makes Greg such an Amiga supremo? Well, Greg sums it up best himself: 'The Amiga with B&P Pro 2 is the most powerful sequencing tool on the market at the moment, the features of B&P are unrivalled, and with the

power of the A4000 and CBM's on-site warranty, the A4000 is a valuable tool for amateurs and professionals right up to studio level.' Comments like this are becoming rife as the Amiga becomes more popular with professional musicians, and with an A4000/040 at the core of studios like Heritage, the Amiga can only go from strength to strength!

With a day to spend at Heritage Studios, the winner will be able to take advantage of features such as 16 track 20-bit digital recording, with 48 channels of MIDI. The winning musician/s will be using B&P Pro running on an A4000, with a host of effects units, sam-

plers and keyboards. They will also be guided through their recording by Greg, so don't worry if you've never been in a studio before.

As well as the recording time, both the winner and runner-up will receive a copy of Bars & Pipes Professional 2 sequencer from Blue Ribbon Soundworks, which received a Format Gold 90 per cent in AF46. If you have B&P Pro 2, then you can choose from the range of Blue Ribbon products instead, like the Super Jam! music creation package, or Triple Play Plus, which gives a total of 48 MIDI channels when plugged in your Amiga. So check out the 'How to Enter' box right now!



Both the winner and runner-up of this competition will receive a copy of the excellent Bars & Pipes Pro 2!

HOW TO ENTER

What you have to do is create a piece of music using your Amiga. This could be either using the Amiga's internal sound and sample capabilities, or using your Amiga to drive external MIDI instruments if you have them.

When you have created your music, record it on to either ordinary cassette or DAT, and send it in to Deborah Thackery-Tyres at the following address:

Heritage Studios, Heritage House, Main Street, Upton, Huntingdon PE17 5YF.

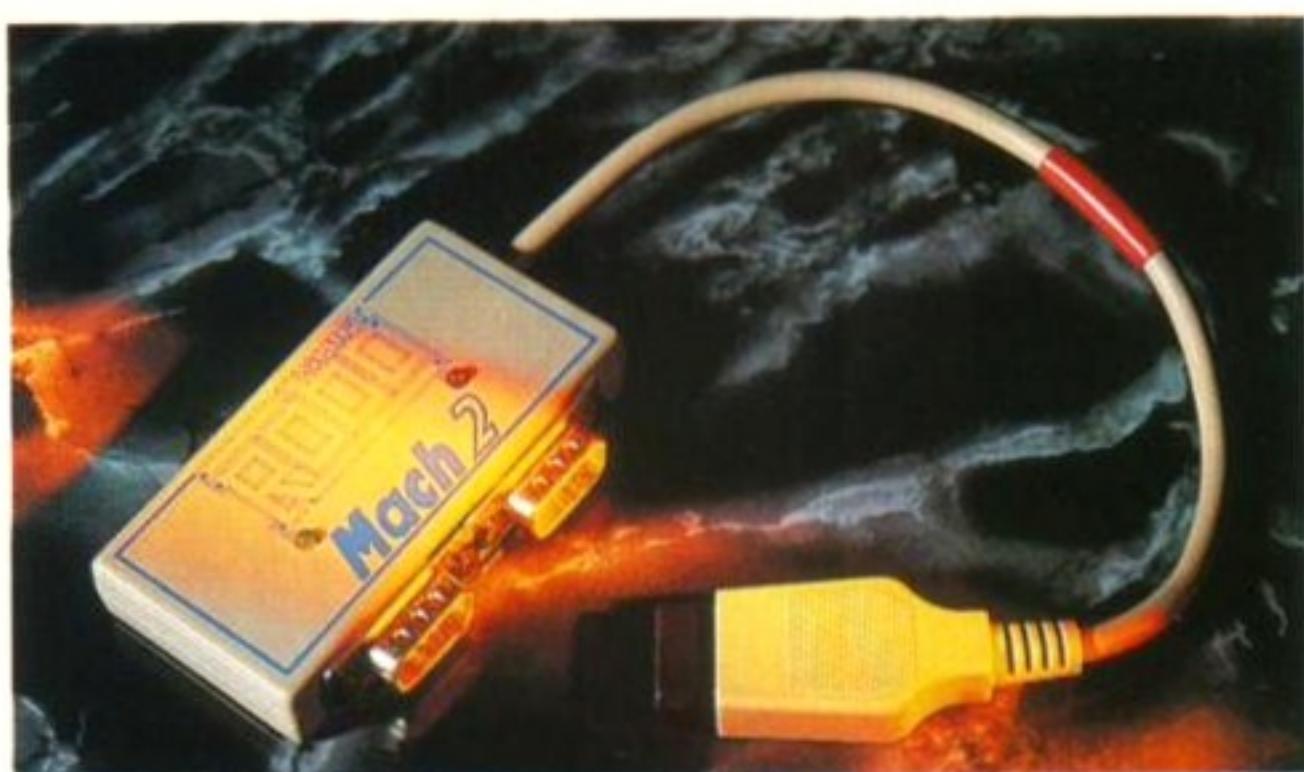
Your entry must arrive by 1 October 1993, which gives you a full three months to compose your masterpiece. The entries will be judged by a panel including Evelyn Glennie, Greg Malcangi and a member of Commodore. The prize will be pre-

sented at the Future Entertainment Show on 11-14 November (the winner and runner-up will be given free tickets to the show and transport within the UK, if necessary, will be arranged).

Please supply a list of equipment you have used, so that the judges can take this into account when listening to your music – that way, a piece of music created using ProTracker will have as much chance of winning as a piece created using professional equipment. Don't send an original master of your music, because it cannot be returned to you.

THE RULES

Employees of Future Publishing and Commodore Business Machines may not enter. Entries will be judged by the panel after the closing date of 1 October 1993. The judging panel's decision is final.



RoboShift 2 is a small box which connects your mouse and joystick to the Amiga. Switching between them is only a click away.

Robo Shift 2

Joystick/mouse switcher ■ £19.99

■ Meedmore Ltd

Constantly unplugging your mouse to plug in the joystick for a quick game of *Defender* is not only a pain, but it's bad for the connectors. With all that repeated insertion and removal, something, as they say, has got to give. Chances are that eventually it will either be the mouse port or the plug, leaving you with a dead rodent. Plus, if your Amiga set-up is anything like most of ours, the rear of your machine will resemble the offcuts bin of a cable factory, making finding the appropriate cable rather difficult.

The Robo Shift is designed to get around

ROBO SHIFT 2 is available from Meedmore Ltd on 051-521 2202

this, by allowing you to leave both the mouse and joystick plugged in. It's a small grey box, approximately two inches wide, one inch deep and half an inch high. Two sockets (for the mouse and joystick) are on the front of this box, with a couple of different coloured LEDs indicating which is currently active. A cable runs from the right of the box and plugs into the mouse port of the Amiga. It draws the minimal amount of power it needs from this port.

To switch between the mouse and joystick you just press the left button on the one that isn't active – control switches over to the other device, and is indicated by the LED on the unit. The previous Robo Shift had the annoying habit of passing this through to the Amiga, meaning that you could activate things that you don't want to. Fortunately, the new version doesn't do this, and the only effect of clicking is to change over the activated device.

The Robo Shift 2 also includes a mouse emulator and autofire module, which are activated by pushing the joystick up or down when you click to select it. These modules are also available on their own (see box below).

The autofire option works fine on any joystick without this built in, but it's a pity that it's not more user controllable, as the rate of fire can't be altered. The mouse emulation works with most drives, and is almost useable with a joypad. However, it refused to work with some joysticks, and the lack of a right button on most joysticks means that this is rather useless. Why you would want this module on a device for switching between a joystick and a mouse is a mystery – why not just switch over to the mouse? It's probably designed for use with certain flight sims, such as *ProFlight*, which play better with the mouse

If you want to avoid constantly switching leads over, the Robo Shift 2 achieves this. But it is rather expensive, and the autofire and mouse emulation facilities are of limited use.

Richard Baguley 



70%

JOYSTICK? I WANT A MOUSE!

The mouse emulator and autofire modules built into the Robo Shift 2 are also available as separate modules which fit in between the joystick and the port on the back of the Amiga. The Cybershot autofire module (£5.99) gives any joystick autofire, although it's not switchable, so you're stuck with it unless you keep plugging and unplugging it. As with most joysticks, control over the rate of autofire is lacking.

The Mock-e-Mouse Mouse emulator (£8.99) attempts to turn your joystick into a mouse, although its success is limited. Moving the mouse pointer is possible with some joysticks (such as the Konix Speed King), but it refuses to work with others

(in particular the Powerplay Competition Pro). The other problem is although most joysticks have two buttons, these are usually wired together, meaning that there is no equivalent of the right mouse button, so you can't access menus.



You can power up your joystick, or even give it a new identity of the long-tailed type.

DP IBM Analog Interface

Joystick/mouse switcher ■ £14.95 ■ Digi Print

DP IBM ANALOG JOYSTICK INTERFACE is available from Lightwave on 051-630 5003.



Now you too can plug ridiculously large and weird shaped PC joysticks into your Amiga, and pretend that you're flying a real plane.

IF YOU'RE a flight sim freak, you will probably be bemoaning the lack of any decent analogue joysticks for the Amiga. The PC, however, has many models, including several weird shaped models designed to complement flight sims by acting as aeroplane yokes. Unfortunately, the Joystick interface on the PC is very different, so up until now it hasn't been possible to connect these to an Amiga.

The DP IBM Analog Interface is a short grey cable, about a foot long, with a standard Amiga 9-pin plug on one end, and a 15-pin socket where the IBM joystick plugs in. This also has a three-way switch which alters its sensitivity, as joysticks don't all act the same. Once you've plugged in your analogue joystick, it acts like a standard Amiga one.

Most flight sims support the use of analogue joysticks, and it makes programs such as

Knights of the Sky far easier to control. However, many programs don't allow you to use the buttons on the stick, so you have to use both this and the keyboard. The DP interface passes the signals correctly, but the software doesn't pick it up. However, playing some games such as *F15 Strike Eagle II*, and using a large yoke type stick adds a new dimension to flying. This adapter is only as good as the joystick you plug into it, but the interface works well, and allows you to use all of the joysticks available for the IBM PC.

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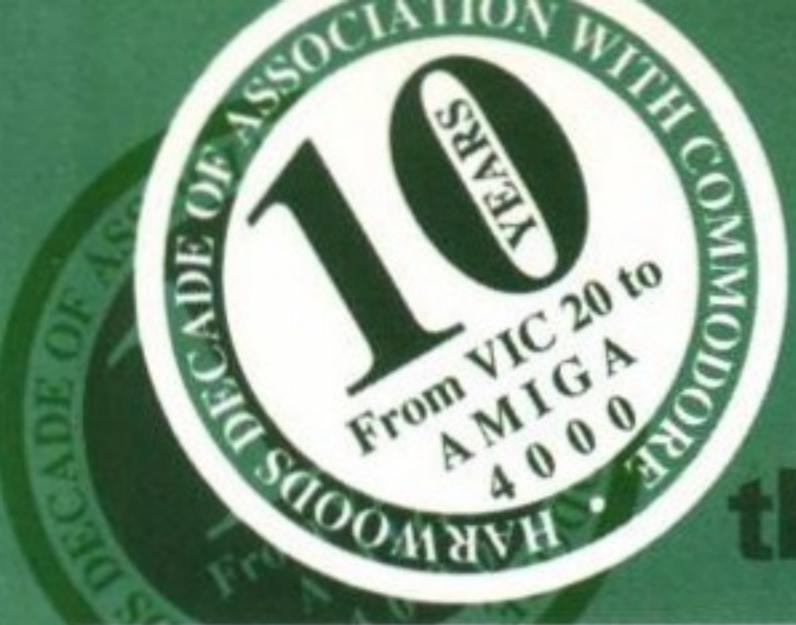
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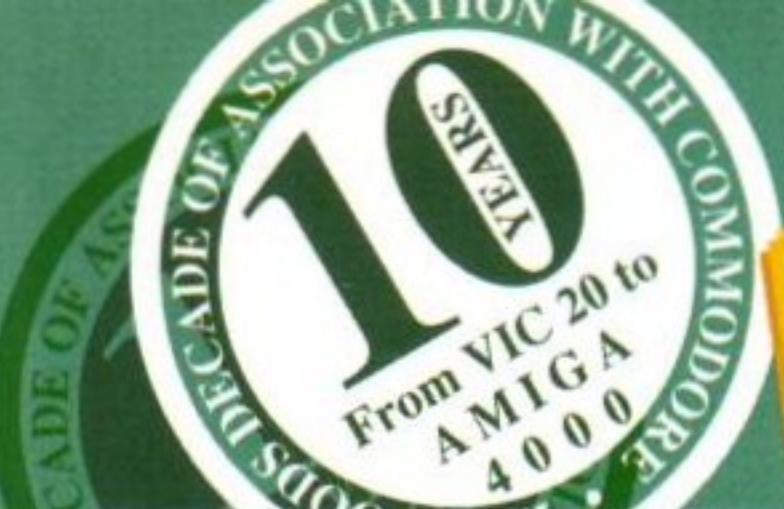
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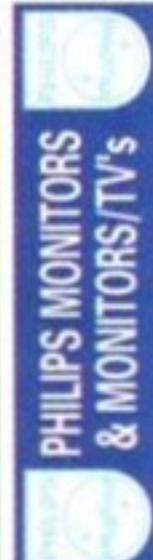
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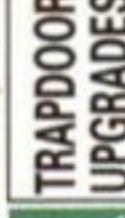
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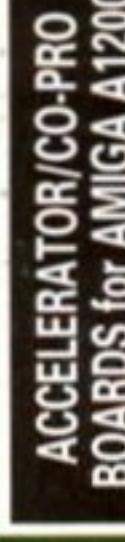
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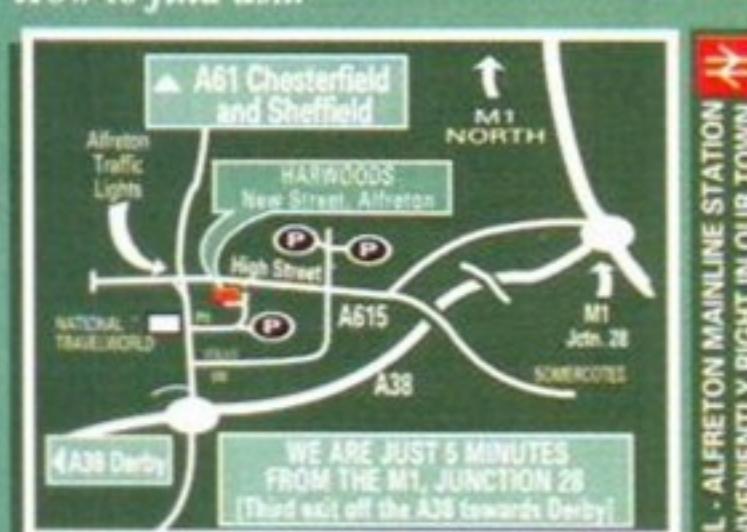
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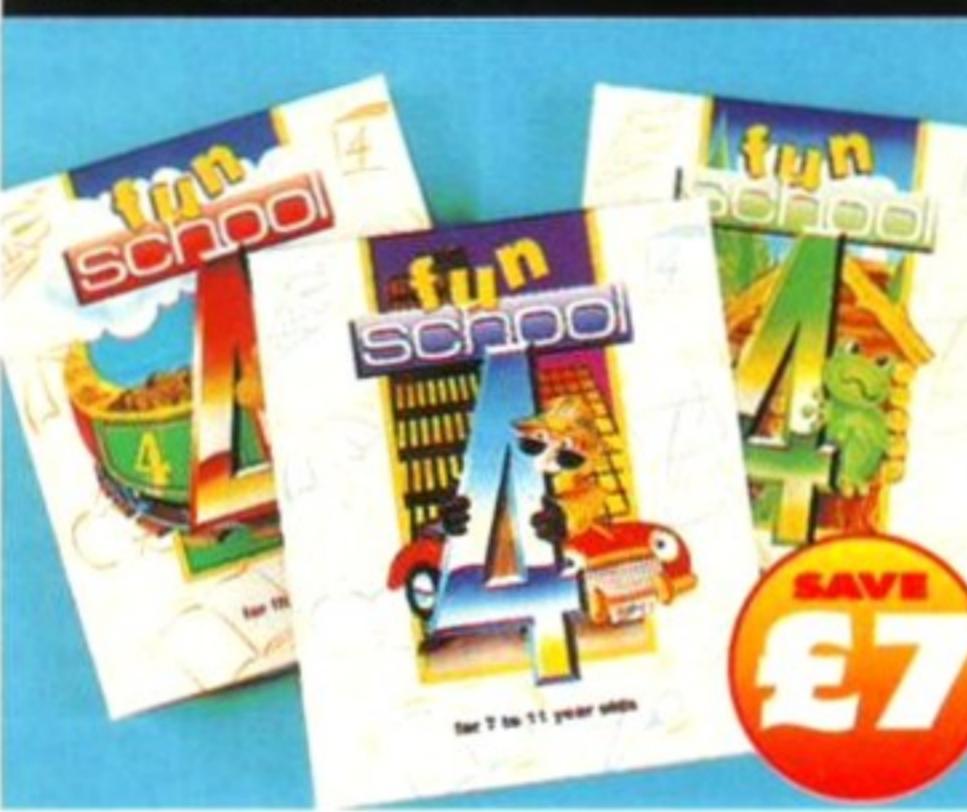
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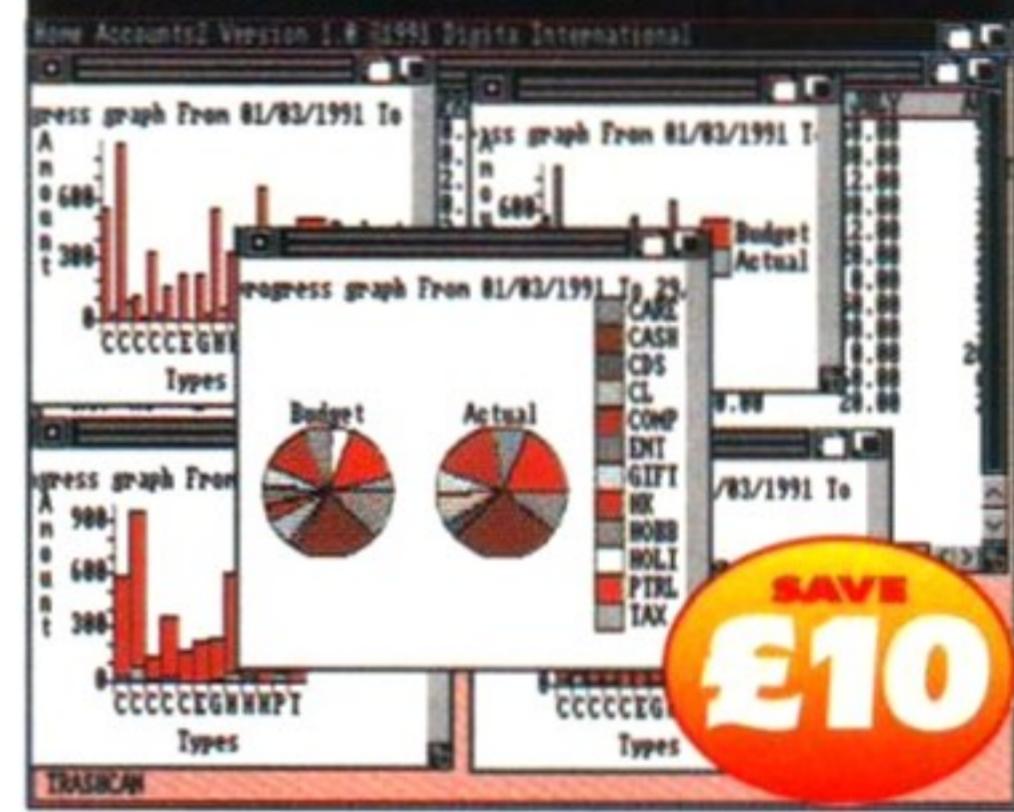
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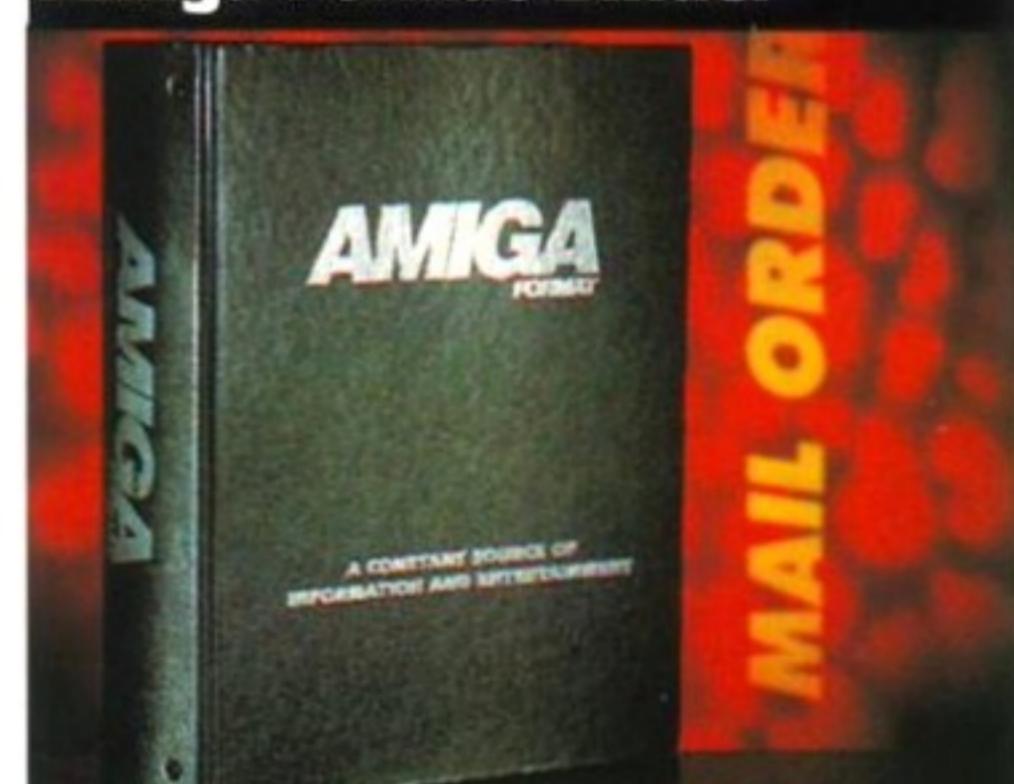
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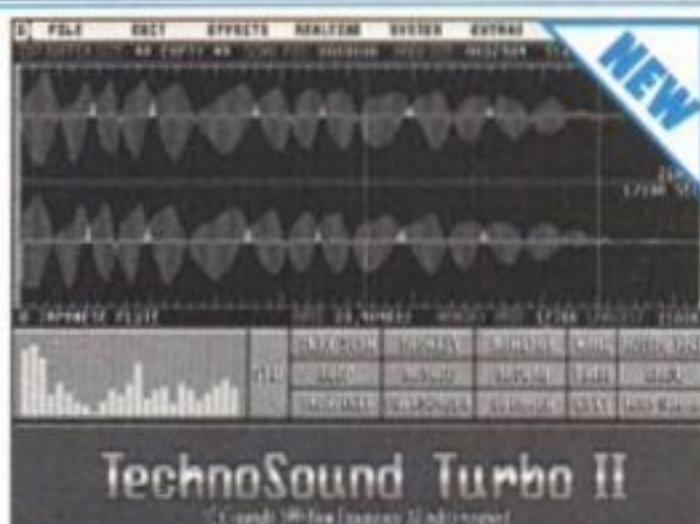
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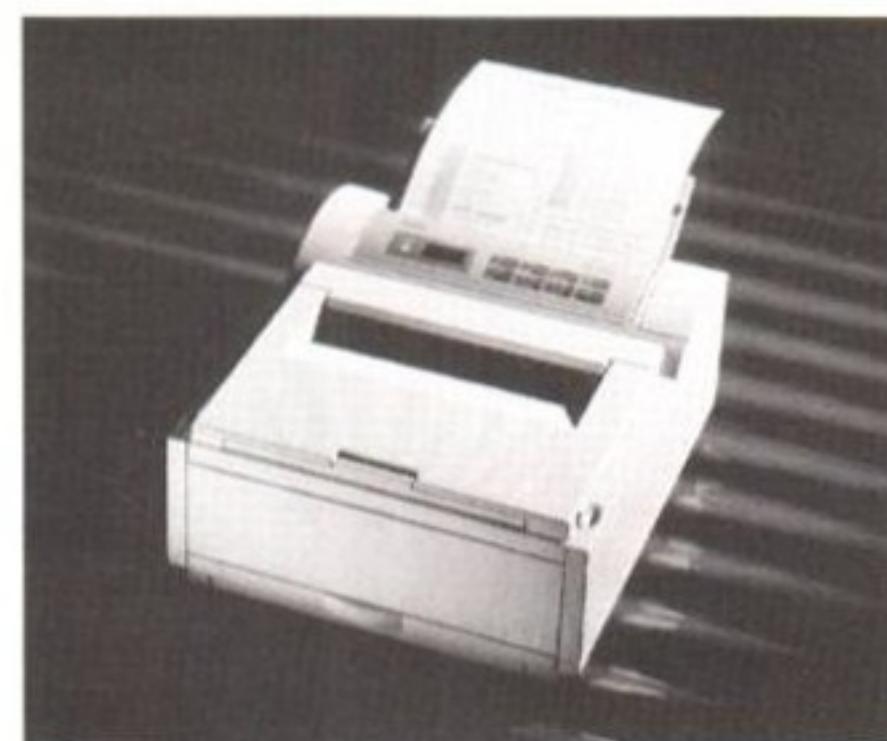
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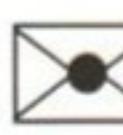
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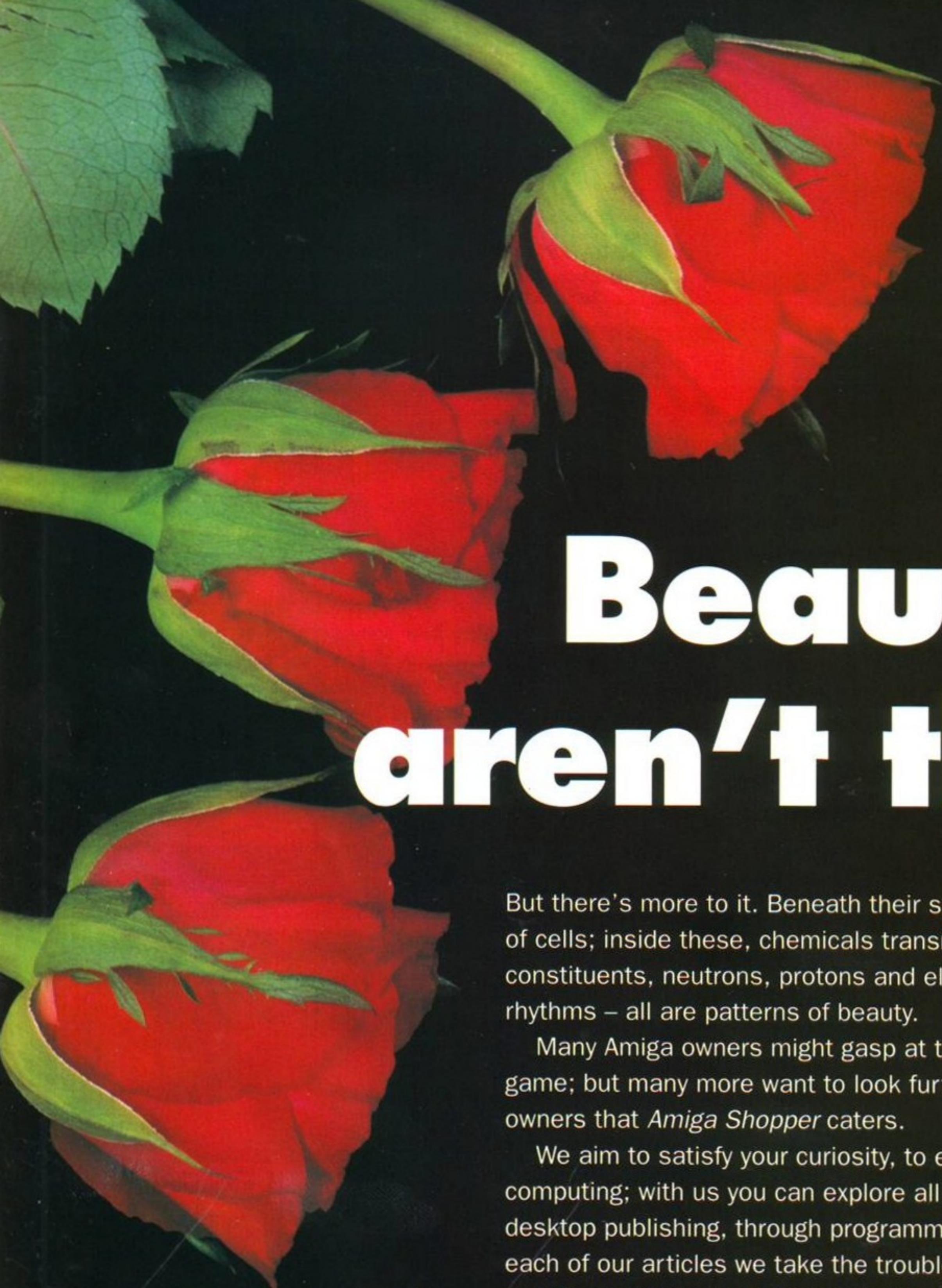
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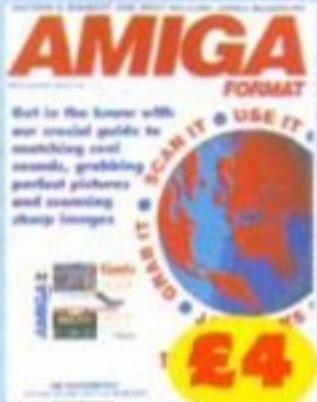
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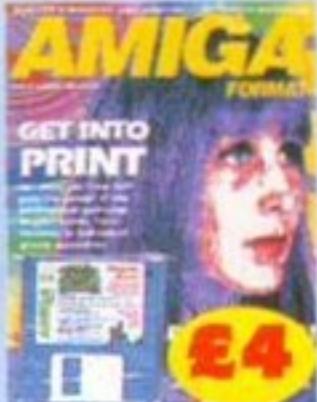
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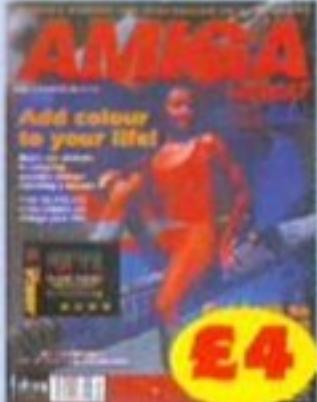
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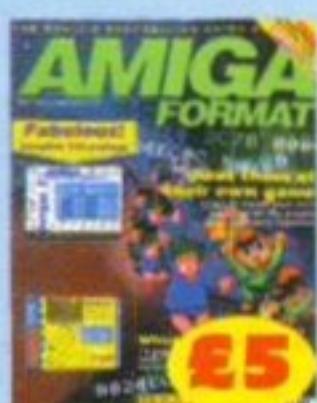
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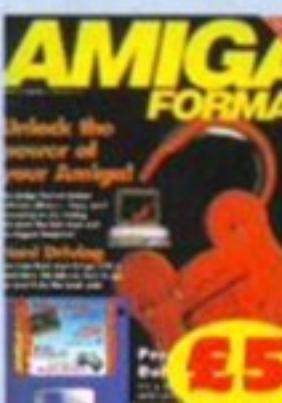
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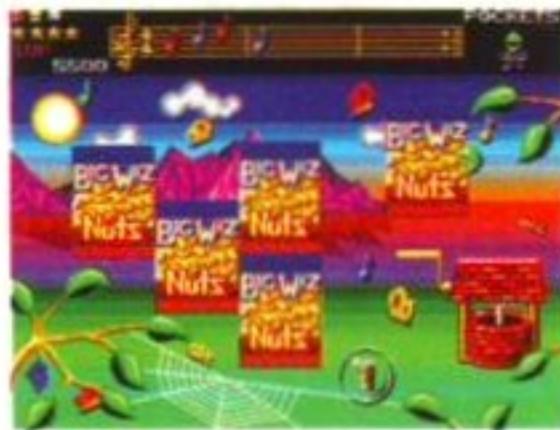


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Wizkid

A stunningly bizarre platform puzzle adventure game from the inappropriately named Sensible Software. Wizkid scored 93 per cent in **AF37**. And it deserved every single point.



Sportmaster

Four sports sims in one box. Most notable for the wonderful PGA Tour Golf, a game which no-one should be without. Plus Advantage Tennis, Indianapolis 500 and European Cup Soccer. Scored 90 per cent in **AF44**.



HistoryLine 1914-18

This superb war strategy game is based on the same principles as the FG-scoring Battle Isle. This time it's the course and events of WW1 that you are controlling. It scored a massive 94 per cent in **AF43**.

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PE030 DESKTOP GUIDE TO ELECTRONIC MUSIC! + Y

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BUSINESS

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PB024 LAST WILLS & TESTAMENTS Just in case + Y

PB025 EDWORD Brand new wordprocessor + Y

PB026 AGRAPH Super Program graphics data+Y

PB028 ADDRESS PRINT Good label printing program + Y

PB029 THE MONEY PROGRAM Home accounting + Y

PB031 EASYCALC A superb new Fast spreadsheet! + Y

PB032 PAY ADVICE Keep record of pay slips! + Y

PB033 A BASE A shareware database program!+Y

PB035 BUDGET V1.34 manage personal finances!+Y

PB036 CHECKBOOK ACCOUNTANT V2.01 superb! + Y

UTILITIES

(Note: "Y" is ok on A1200)

PU002 A-GENE Good genealogy program + Y

PU004b/a64 EMULATOR NEW VERSION 2.0 (2)

PU005 AMATEUR RADIO 1 Interest to radio hams + Y

PU010 ARP 1.3 Amigados requester system!+Y

PU012 ASI GRAFFIX UTILS graphics converters etc+Y

PU013 ASI BOOT UTILITIES bootblock utilities + Y

PU015 BIORHYTHMS, STARCHART 2 Good programs+ Y

PU021 C-LIGHT RAY TRACER Good program + Y

PU022 CHEMESTHETICS molecule display+ Y

PU033 CURSER BASIC COMPILER Just what you need!+ Y

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PU038 DBW The foreman to Skud 3D !!! + Y

PU046 DYNAMITE FONTS II CutnPaste fontscreens Y

PU049 DYNAMITE FONTS III CutnPaste fonts Y

PU055 ELECTROCAD DEMO circuit designer + Y

PU059 FONTS & SURFACES Backdrops & fonts+ Y

PU062 GRAPHICS UTILITIES Various misc. programs+ Y

PU063 HAMLAB PRO V2.08 version VQA PC/FH/FAM+ Y

PU064 HARDDRIVE UTILS MRBackup & FixDisk & more+ Y

PU065 ICONMANIA Program icons & more!+ Y

PA014 STIRLING II ENGINE Another fab engine anim!+ Y

PA015 STIRLING II ENGINE Another fab engine anim!+ Y

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UTILITIES

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- +2575 (AB) Snow Joke Anim 2 Meg Charly Cat Jobby.
- +2565 Capri Slideshow Shouldn't that be Crap??
- X2562 Ham 8 Pics More pics for you A1200 Owners!
- +2559 (AB) Monty Python Anim Grin! is all I will say!
- +2557 (AB) Lex Goudsmit Tribute Broad Minded only!
- +2554 Beach Anim Another single screen Carl Inc Anim
- 2545 CryptoBurners Slides Miss this one at your peril!
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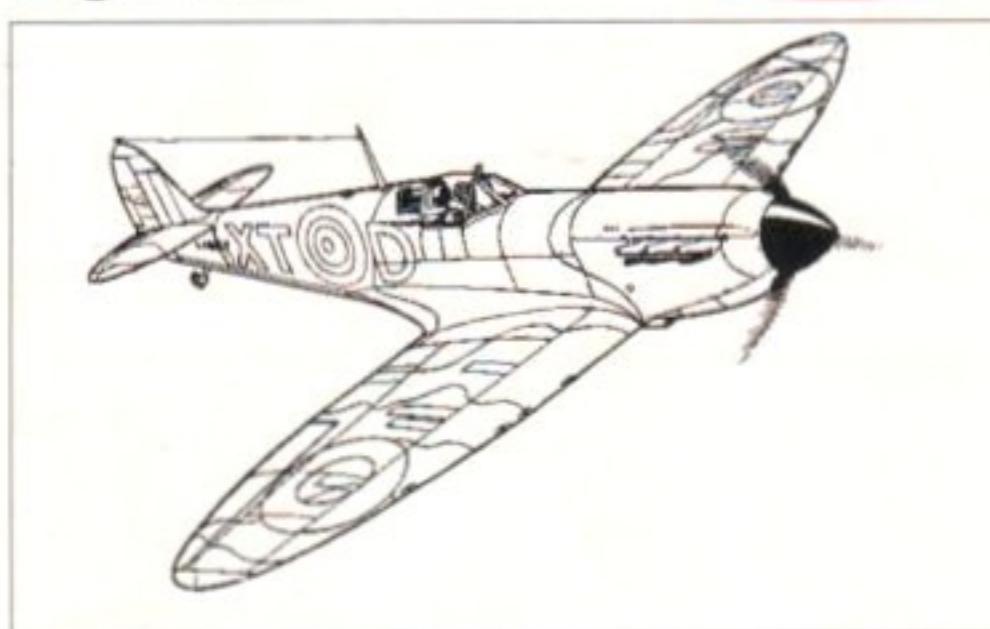
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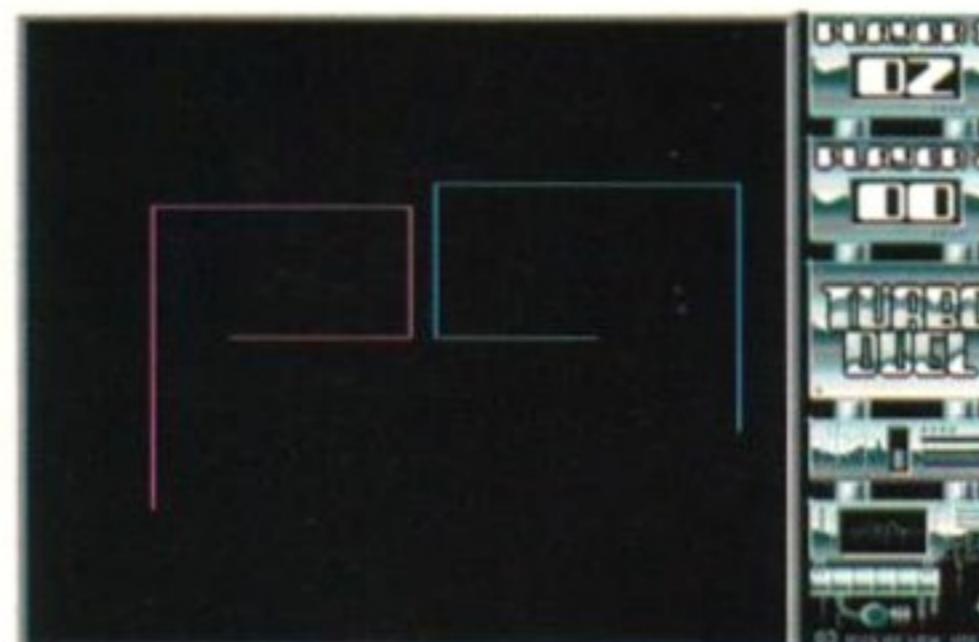
WWII PLANES **CLIP ART**
 DTgraphics


If WWII planes are your thing, this disk of clip art could be useful. This is that Battle of Britain winner, a Spitfire.

Clip art is extremely useful for making your documents look more impressive, as long as it's relevant. So, if you're working on something to do with World War II planes, this could be useful. It contains 25 illustrations of, surprise surprise, World War II aircraft. All are high resolution, two colour screens, so there should be no problem printing them. This is only one of 60 disks on various topics such as sport and frame borders. They have all obviously been digitised from various sources, but they all seem to be of high quality, and would print out well from most DTP or word processing programs.

TRONS
HIGHLAND PD

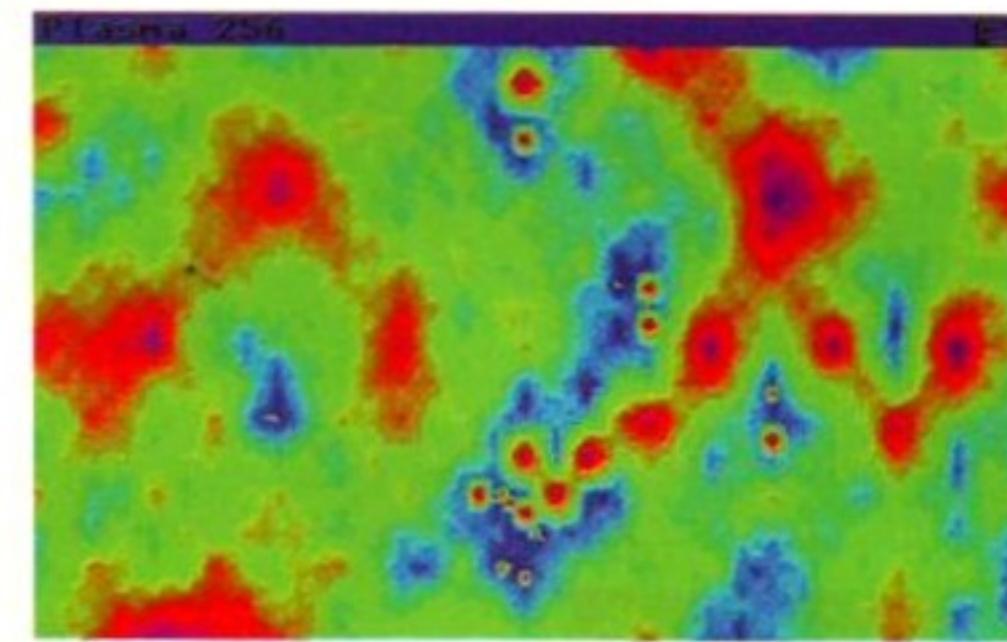
If you needed any evidence that films influence computer games, this disk is a good place to start. It's a compilation of five games based around the 'light cycles' sequence in the film *Tron*, where you manoeuvre a bike around a playing area leaving a trail behind you. If you or your opponent crashes into this, it's Game Over. All of the games on this disk are based around the same idea, although some add other factors like obstacles on the playing area, or options for up to six players. All of the games are pretty good, but there are a few that really do stand out from the crowd.

GAME


Tricky tactics need to be employed against the opposition when you're playing *Tron Duel*.

**AGA TOOLS 1
AND 3 UTIL**
CYNOSTIC U0142
CYNOSTIC U0143

It's about time a collection like this appeared for all those eager new A1200 and A4000/030 owners out there. AGA Tools and 3 Util contains a wide variety of programs and utilities which are useful specifically for these machines. There's a new version of *Rend24* (featured on the subscribers' disk this issue), a datatype for

UTIL


Among various utilities is one to generate plasma effects in 256 colours, which look rather nice...

viewing GIF files with multiview and a variety of programmers' utilities for dealing with the new AGA modes. Also included is the newest version of the popular picture viewer *PPShow*, which now supports the new modes.

There's no sign of volume 2, but volume 3 contains several more utilities, including an AGA version of *Clouds*, the popular fractal cloud generator, a HAM-8 JPEG viewer and a 256-colour plasma generator.

Continued overleaf

**STOCK CONTROLLER
INVOICE MASTER 2**
 ESSEX COMPUTER SYSTEMS

BUSINESS

It's good to see some more serious software finally appearing on the Amiga, since this is an area that's been rather lacking over the last few years. We did look at a stock control program in AF43, and now a couple more are available as Licenceware. This means that they do cost slightly more than normal PD programs (£3.50), but part of this does go straight to the programmer, which

• [F1 PRINTS 1 COPY] [F2 PRINTS 2 COPIES] [F10 CANCELS]

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Preparing professional looking invoices is extremely easy with *Invoice Master 2*, and it's ideal for the small business.

encourages him to support this and write further versions to the software. Both programs share the same colourful, easy-to-use interface, and are suitable for small businesses. I don't think you'd be able to run a multinational using these programs though. *Invoice Master* produces good, professional documents and keeps these on file for future reference, while the stock control program provides a good interface.

Stock Control contains all of the usual stuff you'd expect on such a program, with user definable re-order levels, preferred suppliers and comments for each product.

Entry #1

ADD RECORD	DELETE	SORT RECORDS	SAVE FILE	LOAD FILE
Goldfish Splongers	PRODUCT	50	SOLD	
34	STOCK CODE	10	PURCHASED	
123.89	RETAIL PRICE	0	IN STOCK	
		25	RE-ORDER LEVEL	
		RE-ORDER NOW		
Goldfish supplies	SUPPLIER 1 0898 666777	TEL:	Auto Save	
Squonk PLC	SUPPLIER 2 0181 213 567	TEL:	Every 10 Minutes	
a popular item with magazine editors.				
Comments				
Print This Record				

Written By J.P. Dudley (C)1993
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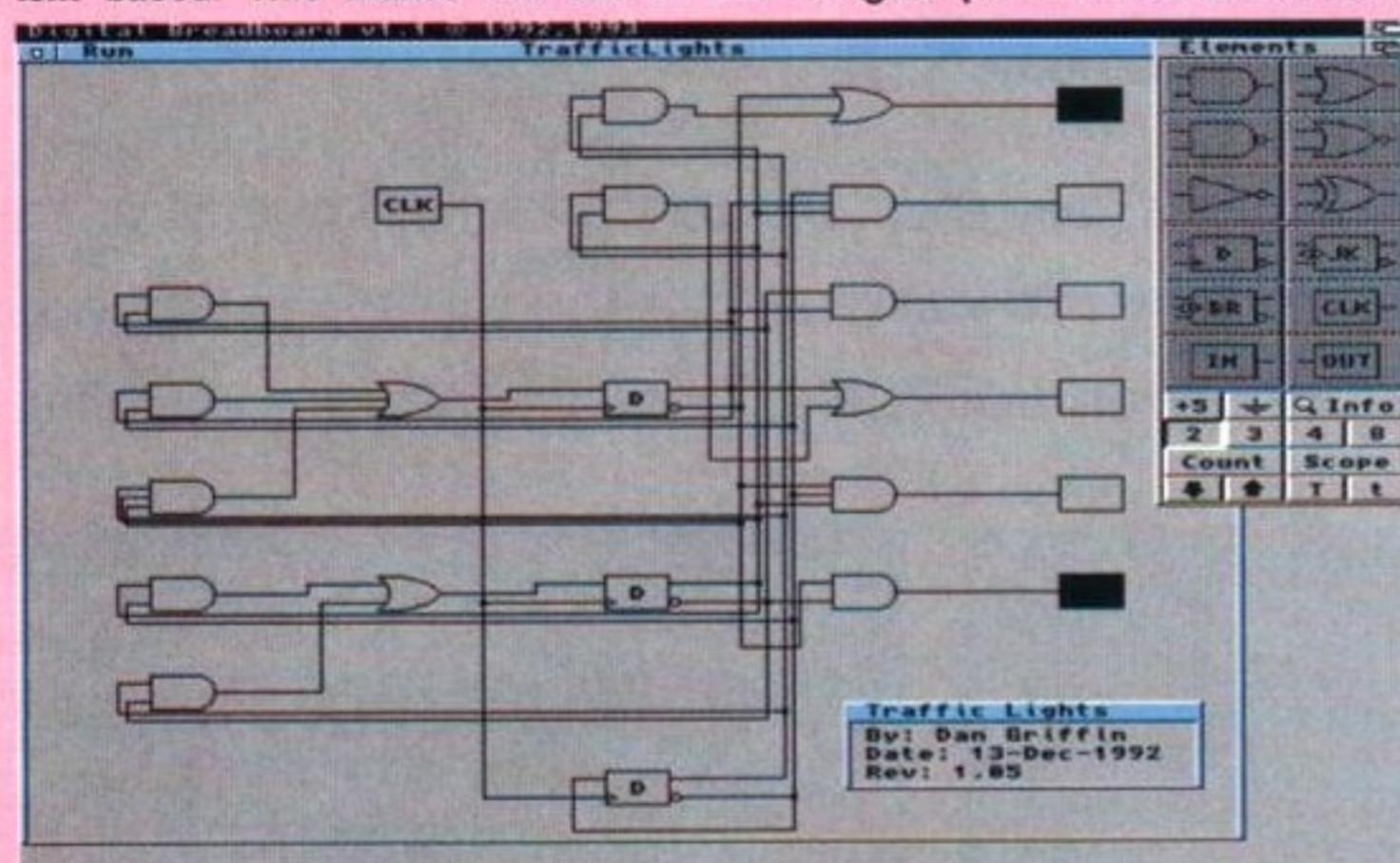
Stock Controller is a reasonably basic program, but it could be very useful in a small business to aid with monitoring and ordering supplies of goods.

DIGITAL BREAD BOARD

FRED FISK DISK 844

UTIL

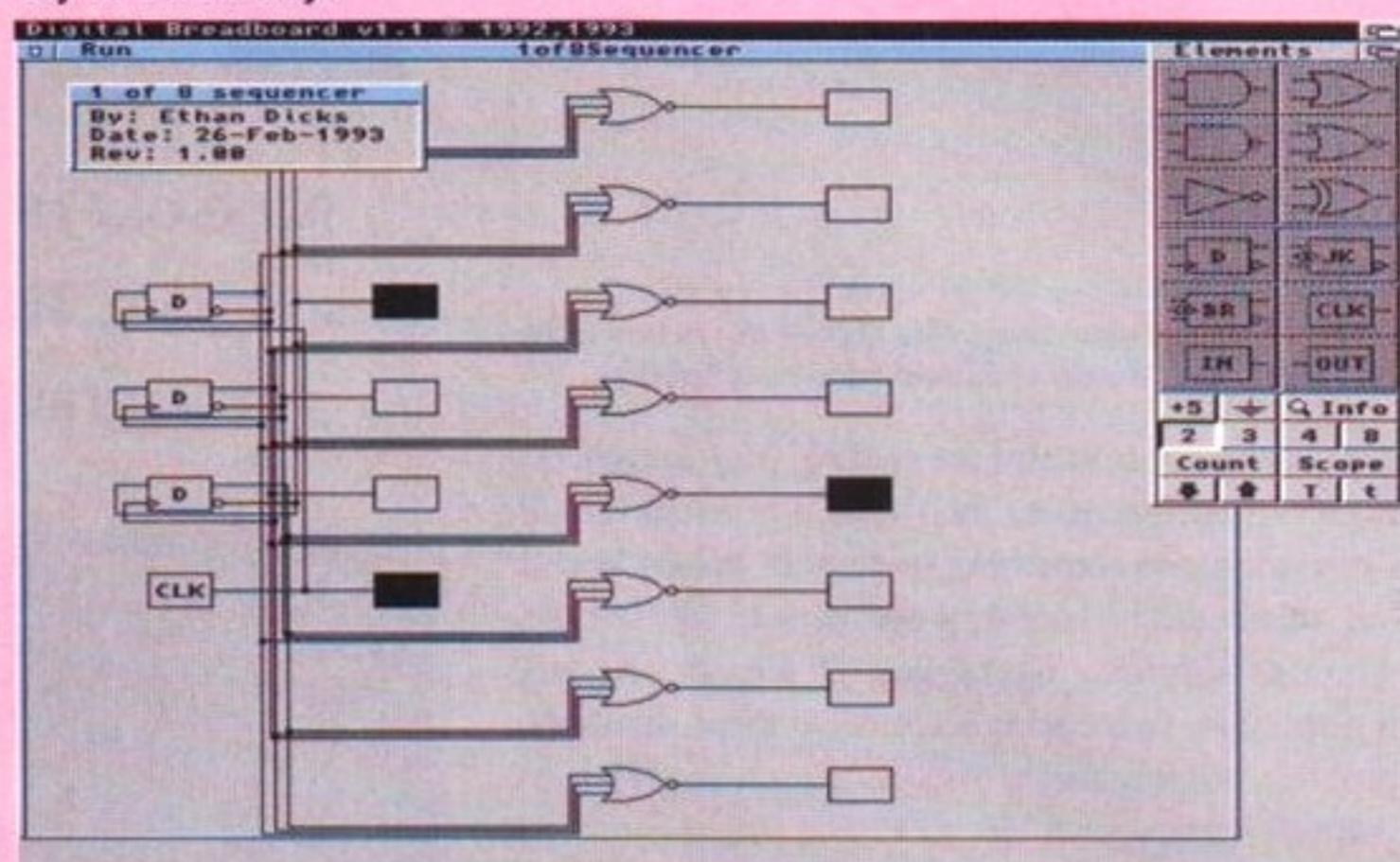
Designing logic circuits can be a pain. All those NOT, AND and NOR gates can get rather confusing, and predicting the behaviour of circuits is a complete pain, involving a large amount of matrix mathematics, a degree in higher mathematics and a lot of patience. Programs do exist which will simulate the behaviour of a circuit for you, but they aren't particularly friendly, mostly being text based. This makes full use of the Amiga's point-and-click interface,



This is a circuit on which most traffic lights are based, believe it or not. Programs like Digital Bread Board make designing these things much easier.

meaning that to build a circuit takes only a few mouse clicks to place the various types of logic gates, and a few more to connect them together in the correct fashion.

Once you've built your circuit, you can try running it to see exactly how it behaves. The state of each of the logic gates is shown, so you can trace the clock pulses through the circuit. This is invaluable if you want to pinpoint precisely a problem in a circuit. If you are interested or involved in electronic design, then this program could be extremely useful. If you're not, you'll probably be bored silly.



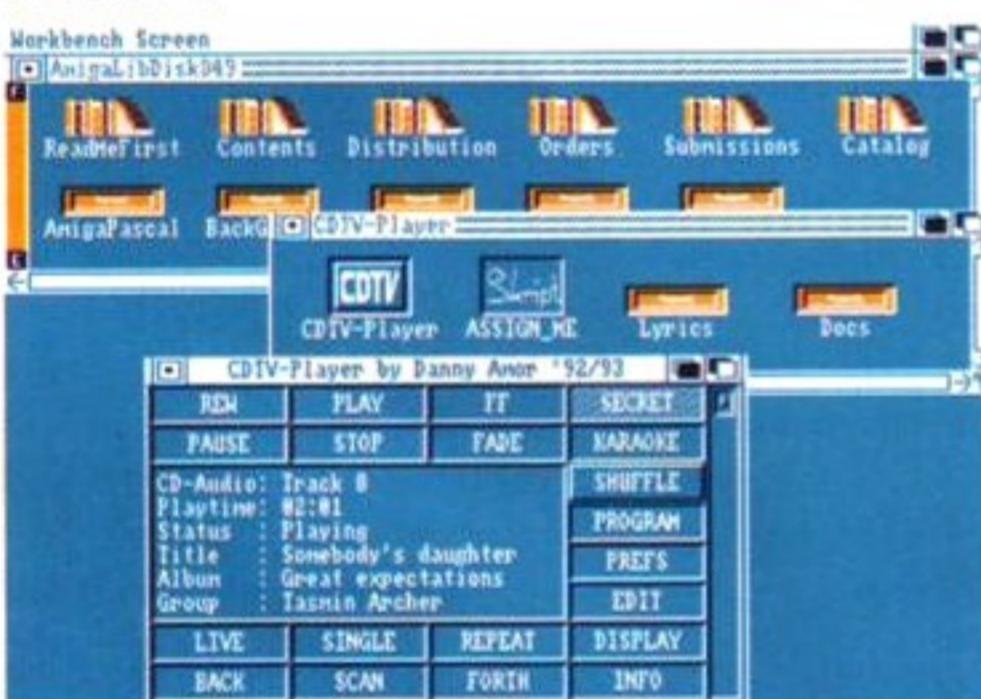
Ah, the old one of eight logic sequencer. Although this program can only cope with 100 logic gates, this is quite enough to build some pretty complex circuits.

FRED FISH

849

PDSOFT

UTIL



Your chance to sing along with Tasmin Archer in your own home. All together now: 'I blame you for the moonlit...'

Despite rumours to the contrary, Fred Fish is still going strong. He's an American who compiles sets of disks containing the best Amiga PD and shareware available. Fred's been going strong for several years, but recently people haven't been obtaining disks direct from him, and he's considering giving up, which would be a shame.

This disk has several excellent programs, including an Amiga Pascal compiler, a Workbench backgammon program, a multitasking audio CD player program for the CDTV and A570 which allows you to play a CD and use the Amiga at the same time (not forgetting the karaoke functions), a maths graph plotting program and a real-time reflection mapper which includes full source code. If you want disks direct from Fred, it'll cost you \$4 per disk, but you will be getting some of the best Amiga PD in the world mailed directly to you.

FAKEFAST

MEM

CYNOSTIC U0141

GAME

Having 2Mb of chip memory on your Amiga is all very well, but sometimes it can be pain. If you're using a program that needs fast memory and you haven't expanded your A1200's memory, you have a problem.

Fortunately, an anonymous PD writer has a solution, in the form of a small program which reboots the

machine and restricts it to 512K of chip memory. With *FakeFast Mem*, you can keep the benefits of the AGA chip set and you can also have fast memory on an A1200, or increase the amount of fast memory you have on an A3000.

AM/FM

SAMPLE DISK

CYNOSTIC S0100

MUSIC

Another in the collection of disks produced by the Disk music magazine *AM/FM*. The disk contains 19 samples, with subjects which are rather, erm, unusual. The sounds have titles such as Scream (female), Scream (male), Eyeballs Being Gouged, Hungry Monster and Strangulation. But it's all done in the best possible taste.

All of the sounds have been sampled with minimal levels of background noise. Unfortunately, they are long, so there are only 19 on the disk. I would have thought a wider selection of shorter samples would have been of more use, but for £2 it's good value.

UCHESS

CYNOSTIC G0097

GAME



Beautiful 256-colour graphics and excellent gameplay... What more could you want? Enough skill to beat *UChess*?

This is an excellent chess program, but unless you've got an AGA machine (an A1200 or A4000) and over 4Mb of RAM, don't even think about it. The graphics are in 256 colours, and are stunning, although it can be a difficult to differentiate between the pieces and the

board. The program is based on the old PD chess program *GNUChess*, but it's been rewritten and epitomised for use on the new breed of 32-bit Amigas. Included is a list of textbook openings, which can be added to, since they are saved as a text file. It's one of the fastest and best chess games I've come across, and the excellent graphics give it a really polished feel.

TOP 10 DEMOS OF THE MONTH

These are the 10 most popular demos from the following PD library...

SEASOFT

1.	Kick 1.3	1200
2.	V-Morph	1050
3.	Sid 2	966
4.	Super Pacman 92	1061
5.	Amiga Fox	901
6.	Total War	873
7.	Text Plus 3	921
8.	Octamed Pro V4 Demo	1157
9.	Astro 22	1017
10.	Agatron Star Trek	063

WHERE TO GET THE DISKS IN THIS ISSUE

DTGRAPHICS: 32 North Street, Barming, Maidstone, Kent ME16 9HF.

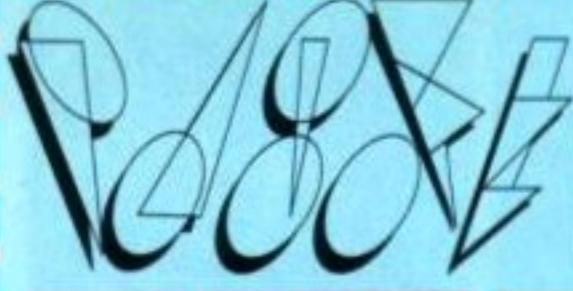
HIGHLAND PD: 1 Whin Park, Muirtown Inverness IV3 6NQ.

ESSEX COMPUTER SYSTEMS: 118 Middle Crockerford, Basildon, Essex SS16 4JA. 0850 668513

PDSOFT: 1 Bryant Avenue, Southend on Sea Essex SS1 2YD. 0702 466933

FRED FISH: Amiga Library Disks, 1835 East Belmont Drive, Tempe, Arizona 85284, USA.

CYNOSTIC PD: 85 Wyken Croft, Coventry CV2 3AD. 0203 682084



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TEL OR FAX HOTLINE (0702) 466933

PD SOFT (AF49) 1 BRYANT AVE, SOUTHEND-ON-SEA, ESSEX, SS1 2YD



EDUCATIONAL DISKS

□ + V13 PLAY & READ CHALLENGE

(2) Education progs for the under 7's

□ + V546 KIDS PAINT

A painting program designed for children.

Includes various colours & speech.

□ + V584 FASTFACTS

Everything you

ever needed to know about the solar

system. **WORLDMAP** Produces different

sorts of Maps. **PLANETS** Instant locations

□ + V776 AMOS LESSON 1

The best Amiga tutorial program. APD151

□ + V792 KIDS GAMES

Includes Geography, Math, Science and Word

Games. Also contains Wheel of fortune.

□ + V793 AMIGA BEGINNER

You asked for it! A tutorial for the beginner

on using your Amiga. Covers CLI & WB.

□ + V824 ELEMENT V3.0

Nice interactive display of the Periodic Table of Elements.

□ + V825 WORLD DATA BANK

V2.2 Using a database of coordinates of the

OA's, it plots world map's in cylindrical or spherical

projects in degrees of magnification.

□ + V843 DESERT STORM

You can select Map's, and all information

surrounding the Desert Storm Attack.

□ + V849 LANGUAGE TUTOR v1.0

Spanish, French, German & Italian.

□ + V881 SECOND WORLD WAR

Excellent information production.

□ + V908 DPAIN TUTOR

Do you

hod DPaint, Then learn to use it.

□ + V927 CLI TUTOR

Helpful program to understand how to use CLI/Shell.

□ + V933 GCSE MATHS

Program to help with the GCSE maths course

□ + V940 MATHSADV

Simple math problems to solve. **REFLEXTEST** Tests addition, subtraction & multiplication

□ + V941 AMIGA FIRST START

Help on any subject you want - Easy Start

□ + V944 AMIGAWORLD

Contains information about every country on Earth

□ + V1015 JAPANESE 2

2 programs to help teach Japanese. Word-a-day

& Vocabulary. 1019 words database

AMIGA BOOKS

□ AMIGADOS QUICK REFERENCE

If you have just got your New Amiga & the

manual's to complex then try this £7.99

□ USING AREXX ON THE AMIGA

If you have an Amiga+ Then you can use

this as a manual. Includes a disk £26.99

□ AMIGA C FOR BEGINNERS

If you want to learn to program from the basics

then this is the book for you £14.99

□ AMIGA DOS INSIDE & OUT

If the CLI & Shell is hard to learn or you need a

complete reference. Then this is £19.99

□ AMIGA FOR THE BEGINNER

It's here the A to Z beginners Guide to the Amiga.

If help is required then here it is £12.99

CD ROMS

□ CD1 FRED FISH DISKS

The complete collection from disk 1 to 660. £19.99

□ CD2 FRED FISH DISKS

The complete collection from disk 661+ £19.99

VHS VIDEO TAPES

□ AMIGA PRIMER

Get the facts on getting started: Setup, Workbench, Amiga

Dos 2.0+, Expansion Shell & CLI. £15.99

□ STAR WARS ANIMATION

Is a 24 bit raytraced video by Tobias Richter. 25 mins

long and took 6 weeks to render. £11.99

FULL REGISTRED VERSIONS

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With interface & Full Commercial software.

Transfers disks from your original 64 disk

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A management game on the Amiga. £4.99

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(2) 2Mb

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2Mb

□ + 2307 AMY AT THE MOVIES

(2) 4Mb

□ + 2311 AMY vs WALKER

(2) 3Mb

□ + 2384 AMY AT THE BEACH

(2) 3Mb

□ + 2477 AMYWALKS

2Mb

□ + 2478 UNSPORTING

2Mb

□ + 2500 THE SKY DRIVE

*

□ + 3064 QUILTY TIME

(4) 5Mb

□ + 3077 BAIT 2Mb

VARIOUS UTILITIES

□ + V16 AQUARIUM

Turns your screen into an eye-catching fish tank.

□ + V109 PRINT STUDIO

Excellent for printing graphic pictures or text.

□ + V21 DISKMASTER v3.2

Copies files from one disk to another.

□ + V262 DUPLICATION & BACKUP

Super Duper, Turbo copy, Sanity copy

□ + V277 FORTRAN-77 v1.3c

Compiler, linker & run time support libs.

□ + V279 CROSSWORD CREATOR

Creates crosswords. UPDATED VERSION

□ + V298 NORTHC v1.3

The Complete C language with all files needed (2)

□ + V301 EYE OF THE BEHOLDER

Disk Book with Maps, Strategy & Solution.

□ + V233 ANALYTICAL SPREAD

Sheet the best spread sheet. (2)

□ + V332 PUNTS PROGRAM

Predict which horse will win the race

□ + V350 BUSINESS CARD MAKER

Design your own Business cards

□ + V364 600 BUSINESS LETTERS

Over 600 Standard Business letters

□ + V394 DESK TOP PUBLISHING

Extra features. Text & Graphics Editors

□ + V392 AMICASH BANKIN

Best bankin program that I have ever used

□ + V394 CHEMESTICS v2.14

Draws molecules using the colloid model.

□ + V401 WINDOWBENCH v1.0

(2) Workbench 2 replacement / Upgrade for all Workbench v1.3 users.

□ + V420 CURSOR BASIC COMPILER

Compile any Amiga Basic program

□ + V424 ANTI-FLICKER

Said to stop the flicker in High Res mode

during some programs abberations.

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□ + 2279 SUB ATTACK v1.0

Control the torpedoes & sink the enemy

□ + 2280 DIPLOMACY

Classic strategy game loosely based on World War 1. 2Mb

<p



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DEMOS

- D1...Mental Hangover
- D2...Interceptor Demo
- D4...Wild Copper
- D10...17Bit Music Demos
- D11...World Demos 21
- D13...Total Remix Demo
- D14/15...Predators (2)
- D20/21...Red Sector (2)
- D24/25...New Tek Reel 3 (2)
- D26...Total Remix 2 Demo
- D27...T.V Theme
- D30...Epic Demo
- D34...PD Collection
- D36...Virtual Worlds
- D37...Vectra Sinking Demo
- D38...TFF Demo Voyage
- D40...Safe Demo
- D59...Video Effects 3D
- D64...Cult Vector Dance 2
- D68...Phenomena Demo
- D70...Amos 3D Demo
- D74...A Trip to Mars
- D76...A2000 Genlock Demo
- D81/82...Budbrain 1 (2)
- D83...Budbrain 2
- D85...Cronicles Neverwhere
- D87...Piranha Demo
- D101...Alcatraz M/Demo 3
- D102...A Chaplin Demo
- D103...Total Destruction
- D105...Mr B Demo Comp 4
- D106...Walter S.T Demos
- D111...Defcon 1
- D117...Aurora M/Demo
- D118...Cult M/Demo 2
- D25...Precise Demo
- D133...Fascination
- D136...Goldfire Megademo
- D137/138...So What (2)
- D139...Devils 'No Reality'
- D144...The Silents 'Ice'
- D145...Crystal Symphonies
- D148...Ray Of Hope 2
- D149...No Brain No Pain
- D158/159...Cyborg Demo (2)
- D195...Coaxial Comp
- D197...MC Disk 1 Coma
- D199...End Of Century 1999
- D206...Dreamers 3
- D208...Avengers M/Demo
- D216/217...Base o Matic (2)
- D218...Disorder Demo
- D219...Tuff Enuff
- D225...Cool Fridge Demo
- D226...Hardcrack M/Demo
- D233...Hypnauc Hammer
- D235...Six of One Demo
- D238...Planetside
- D239...Lemmings Revenge
- D240...Total Reespray
- D243...Budbrain 3
- D244...Phenomena Inerspace
- D245...Total Retrieval
- D247...Pulling the Trigger
- D253...CES Demos
- D256...Total Recount
- D257...Total Rebate
- D262...Spasmolytic
- D264...D-Mob M/Demo
- D267...Sun Connection 2
- D270...Kefrons The Wall
- D271...Timex Hydra
- D272...Electric Demos 1
- D274...Defpackers Demo
- D276...Cave La Weird
- D279...Iraqi Demo
- D280/281...Delirious (2)
- D290...Popseye Demo
- D292...Excalibur Demo
- D298...Silents + Anarchy
- D301...Subway Demo
- D302...Tarot Demo
- D303...Despair Demo
- D307...L.S.D Demo
- D312...Devils Colours
- D314...Traikno
- D315...The Groove Ramjam
- D322/323...Star Wars (2)
- D325/326...Real Empathy (2)
- D328/329...Red Dwarf (2)
- D330...Darkness M/Demo
- D332...Melted Experience
- D333-337...Odyssey (5)
- D338...Beastie Boys Demo
- D340...Watchman Demo
- D341...Anarchy Smoker Co
- D342...Ed 209 The Revenge
- D343/344...Hardwired (2)
- D346...Wildfire M/Demo
- D347...Mindwarp M/Demo
- D348/349...Skizzo Demo (2)
- D350-352...Treacle Team (3)
- D358...Mr Men Stories
- D359...Seeing is Believing
- D360...State of the Art
- D361...Mayday Resistance
- D362/363...Jesus on E's (2)
- D364...Fish Tank
- D365...Optimum Pressure
- D366...Mind Riot
- D367...In the Can Demo
- D368...Dynamic Illusions
- D369...Piece of Mind
- D370...3D Demo 2
- D371...Lethal Exit

UTILITIES

- U1...Games Music Creator
- U21...The Comm Disk
- U32...Modem Utils
- U34...Red Devils Utils 1
- U36...Soundtracker Special
- U38...Paint, Music, Media
- U39...Card Designer
- U40...Spectrum Emulator
- U41...Red Devils Utils 4
- U43...Future Composer
- U44...Kefrons Makeboot
- U45...PE Giant Utils 168
- U47...Label Designer
- U49...Ultimate Icon Disk
- U50...Power Comp Utils
- U51...Jazz Bench
- U55...Visicals
- U57...Quickbench
- U59...Font Designer
- U60...D-Paint Fonts 1
- U61...D-Paint Fonts 2
- U62...Med 3.20
- U63...Direct Anim Creator
- U64...Crossword Designer
- U65...CLI Help + Others
- U67...S/Tracker Mega
- U68...Ultimate Boots 1
- U69...Ultimate Boots 2
- U73...Powerlogo
- U74...M-Cad
- U75...Journal Home Acc's
- U76...Home Utilities
- U77...Electrocad
- U78...Ami Base
- U81...Bootbench V2.0
- U82...SlideShow Maker
- U83...Catalog Workshop 1
- U84...Catalog Workshop 2
- U87...Hard Disk Utils
- U89...Amateur Radio (6)
- U95...C-Light + Others
- U96...GFX Utils 1
- U100...Ham Lab
- U101...Sid V2.0
- U108...A-Genie
- U113...Midi Utilities
- U118/119...Video Utils (2)
- U132...GFX Utils 2
- U133/134...North C (2)
- U136...CrossDoss (demo)
- U138...Squid Squad Utils
- U139...Terminallies V1.0
- U140...Squash 1 (2.04 only)
- U141...Squash 2 (2.04 only)
- U142...Text Plus 3
- U144...Dennis Samples 1
- U145...Digital Intro Design
- U146...Viz Clip Art
- U147...Spectrum Emulator
- U151...Sipstream V/Killers
- U152...Red Devils Utils 6
- U154...Amigafax W/P
- U155...PD Utils Docs Disk
- U163...Quickbench + (2.04)
- U164...Rim Database
- U166...Dennis's Hack Disk
- U167...Demolisher Utils
- U168...Home Business 3
- U172...Squatch (1.3 only)
- U176...GFX Utils 3
- U177...Star Charts
- U179...180...Dice (2)
- U181...Celtic Demo Maker
- U186...Defpackers Demo
- U207...Icon Collection 1
- U208...Dave Jones Fonts 1
- U210...Ultrapaint 3
- U211...Chemesthetics
- U212...Animated Pointers
- U213...Desk Top Publisher
- U214...Diskbench Icons
- U215...Messy Sid 2
- U216...Master V/Killer 2.2
- U218...Data Base Wizard
- U223...Ten Pin Database
- U224...Q-Base Database
- U225...Games Solutions 1
- U231...D-Paint Fonts 3
- U232...Games Cheats 2
- U234...Flexi Base
- U235...Ami Cash V1
- U238...Iconmania
- U240...Icon Editor
- U252...Opticomms 2.0
- U254...New Superkillers 2
- U255...Protracker v2.0
- U256...Atari ST Emulator
- U258...D-Copy 3
- U262...PG Emulator
- U263...Med 3.21
- U273...Vidi Fonts 1
- U274...Jinci Labels
- U275...600 Business Letters
- U279...Invoice Printer
- U280...Woman V2.02D
- U283...Headline Fonts
- U289...Amos Updater
- U290...Kicksart 2.04
- U292...Black Tiger Utils 1
- U293...Black Tiger Utils 2
- U294...Text Engine V4.0
- U295...Game Tamer
- U296...Ultimate Disk Creo
- U297...10 PD Copiers
- U298...Protoscker V3.0

GAMES

- G1...Return to Earth
- G2...Games Comp 5
- G3...Dizzy Lizzy
- G4...Scum Haters
- G5...Parachute Joust
- G6...Frantic Freddie
- G8...Twintails
- G9...Pseudo Cop
- G10...Drip
- G11...Bug Bash
- G12...Asteroids
- G13...Llamatron
- G14...Escape From Jovi
- G15...Moria Adventure
- G16...Ground Attack
- G17...Megaball
- G18...Insiders Club
- G19...Various Adventures
- G20...Battleforce
- G22...Dragon Cave
- G24...Rings of Zon
- G25...Mayhem
- G26...Mechflight
- G27...The Tennis Game
- G28...Flaschier
- G29...Buck Rogers
- G30...Greyslayer
- G31...7-Tiles
- G32...Mega Comp 1
- G33-34...Star Trek 1 (2)
- G35-37...Star Trek 2 (3)
- G38-39...Mechforce (2)
- G40...Klonkyde
- G42...Car
- G43...Games Comp 2
- G44...S.E.U.K Games
- G45...Sacc Games Comp
- G46...Games Comp 3
- G48...Rays Game Disk
- G49...Games Comp 4
- G50...Games Comp 5
- G51-52...Trucking (2)
- G53...Jetpac
- G55...Quick and Silvia
- G56...Miniblast
- G57...Lamer Game
- G58...Games Comp 7
- G59...Games Comp 8
- G60...Pom Pom Gunner
- G61...Caverunner
- G62...Crystal Caverns
- G63...Intact
- G64...Eternal Rome
- G65...Lemmingoids
- G66...Downhill Challenge
- G67...Lame ST Ports
- G68...Paranoid
- G69...Puggles
- G70...Chainsaw Death
- G71...Pirate Pete's Treasure
- G72...Serene 2
- G73...Castles
- G74...Dynamite Dick
- G75...Card Games 1
- G76...Wizzy's Quest
- G77...Growth
- G78...Skate
- G79...Atic Atac
- G80...Napoleonic Slim
- G81...Project 1
- G82...Lazer Zone
- G83...Lemmings Pack
- G84...Star Trek S.E.U.P
- G85...Lettrix
- G87...Matched Pairs
- G88...Raphael's Revenge
- G89...Snake Pit
- G90...Zeus
- G91...Merv The Merciless
- G92...Blizzard
- G93...The Maze Game
- G94...Subculture
- G95...Hollywood Trivia
- G97...Shootout
- G99...Holy Grail Adventure
- G100...Amos Coindrop
- G101...Classic Comp 1
- G102...Games Comp 2
- G103...Super Skoda Chall
- G104...Grand Prix Sim
- G105...Games Comp 9
- G106...Computer Conflict 2
- G107...Mission X Raid 2
- G108...NU Game
- G109...Antep + Slot Cars
- G110...Tricky + The Turn
- G111...Marble Slide
- G112...Games Comp 10
- G113...Black Jack Lab
- G114...Dungeon of Madroj
- G115...Amiga Columns
- G116...Robocop in Iraq
- G117...Mutant Camelis
- G118...Games Comp 11
- G119...Number Fumbler
- G120-122...Warlock (3)
- G123...Card Sharp 1
- G124...Bart Simpson
- G125...CC Games Comp
- G126...Air Ace 2
- G127...Breakout Con Kit
- G128...Pipeline
- G129...Dung of Dordian
- G130...Amos Games 1
- G1212-214...Timelords 6-8

SLIDES

- S1...Harm Pics Show 1
- S4...Madonna Slides
- S5...Moviestar Slides
- S6...Party Disaster
- S8...Immaculate Collection
- S9...Simpsons Slides
- S10-11...Channel 42 (2)
- S12...Bruce Lee Slides
- S14...Addams Family
- S15...Viz Mag Slides
- S16...Boris 13
- S17...Docklands Jarre
- S18...Dr Who Demo
- S19...Napalm Death
- S20...Nasa Slides
- S21...Exodus 3D Slides
- S22-24...WWF Slides (3)
- S25...Cascade Demo
- S27...Demons Slides
- S28...Total Recall
- S29...Joe's Slides
- S30...Ham Pics Show 2
- S31...D-Paint Slides
- S32...Neighbours Slides
- S33...Roger Dean Slides
- S34...Iron Maiden Slides
- S35-36...Tobias Richter (2)
- S37...Joe Tsai Slides
- S38...Basket Case 2
- S39...Eces Slides
- S40...Fraxion Devine 2
- S41...Fraxion Devine 1
- S42...Golems Gate Slides
- S43...Chainsaw Slippers
- S44...Cry For Dawn
- S45...Forgotten Realms (2)
- S47...Kick Off 3 Slides
- S48...PD Slideshow
- S49-52...Terminator (4)
- S53...Robocop 2 Slides
- S54...Trackmaster Slides
- S55...Forgotten Realms 2
- S56...Garfield Slides
- S57...Pawbroke Slides
- S58...Hellraiser Slides
- S59...Night Breed Slides
- S60...Raytracing
- S61...Horror Slides
- S63...Tate Gallery 2
- S64...Rock Star Manager
- S65...Images Slides
- S70...Muscle Mania
- S71...Creature Comforts

SLIDES

- S72...The Wonder Years
- S73...Watership Down
- S75...Ferrari 348 Pics
- S76...Belinda Carlisle
- S77...Cher Slides
- S79...Freddie's Dead
- S80...Wendy James Slides
- S81...The Invisible World
- S82-83...Terminator 2 (2)
- S84...Fantasy Pics
- S85...Gulf War Slides
- S86...Magical Pics
- S88...Gulf War Tribute
- S89-90...S/Ting Fishy (2)
- S91...Eldorado Slides

ANIMS

- A1...Probe Sequence
- A2...Ghost Pool
- A3...Jogger + Magician 1
- A4...Gymnast Demo
- A5...Fractal Flight
- A6...Basketball Demo
- A9...Magician 2
- A10...Pugs in Space
- A11...Luxor Teenager
- A13...Juggler Demo
- A16...Cool Cougar
- A17...Mono Cycle Anim
- A18...Robocop Anim
- A20...Mayhem on Wheels
- A21...Jugette 2
- A22...Shuttlecock Anim
- A23...T-Pot Anim
- A27...Fleet Manouvre
- A28...Billiard Anim
- A29...E/Prise Leaves Dock
- A30...Star Wars 2 Anim
- A31...Star Trek Anim
- A32...Fraxion Revenge
- A34...Madonna Anim
- A35...Stealthy Anims 2
- A36...Raiders Of The Lost Ark
- A37...Bugs Bunny Show
- A38...Iraq V's UK Anim
- A39...Mike Tyson Anim
- A40...Knight Anim
- A42...Walker 2
- A43...Walker 3
- A45-46...Light Cycle (2)
- A47...Exploding Head
- A48...Police Car Chase
- A49...Top Gun Demo
- A50...Animators Demo
- A51...5 Ways to Kill a Mole
- A52...Another 5 Ways
- A53...Batman The Movie
- A54...3D Spaceship
- A55...Mr Potato Head
- A57...Camouflage
- A58...VGA Anim 4
- A59...Low Level Flight
- A63...Amy V's Walker
- A64...Real Pinball Anim
- A65...Franklin The Fly
- A66...Porky Pig Anim
- A67...Adventures of Chuck
- A69...Bunsen Burner
- A70-71...Max Overdrive (2)
- A73...Space Shuttle Anim
- A74...Ghostbusters + Horse
- A76...Alarm Anim
- A77...Flight Anim
- A78...Piano Anim
- A79...Dart Anim
- A80...Bad Bird Anim
- A81...Holiday Anim
- A82...Fillet The Fish
- A83...The Boings
- A84...Clothes Peg
- A85...Miners Anim
- A86...Pocket Watch Anim
- A90-93...The Movies 2 (4)
- A95...My Tin Toy
- A96...T-Pot 2 Anim
- A99...Terminator 3
- A100...Dolphin Dreams
- A101/102...Thunderbirds (2)
- A103...Histori Of Amy
- A104...Pogo Anim (2 Meg)

CLR LICENCEWARE

- CLE01...DINOSAURS (LEARN ALL ABOUT CERTAIN TYPES OF DINOSAURS I.E. JURASSIC, TRIASSIC AND CRETACEOUS, ON 2 DISKS £4.50)
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<li

MANGA SLIDES

SHOW

WACK PD, DISKS 5060, 61 AND 62



A typical example of Japanese Anim artwork, lovingly crafted and honed, and brought to your Amiga.

From Sunteam comes a three disk set of artwork copied from various films taken from the range of imported Manga videos from Japan. These include *3 x 3 Eyes*, *Urotsukidoji* and the superb *Akira*. In fact, the *Akira* drawings have a whole disk, with lots of hand-drawn stills from the film, along with flashes of the logo – excellent stuff.

The graphics are wiped in and faded out imaginatively, and the images are truly excellent – they're colourful and well-defined, capturing the feel of the original artwork well.

The music is reasonably typical of the film styles – deep and boomy for *Akira*, light and twee for the other films. Unfortunately there's no option to turn the music off, but you can always turn the volume down on your monitor.

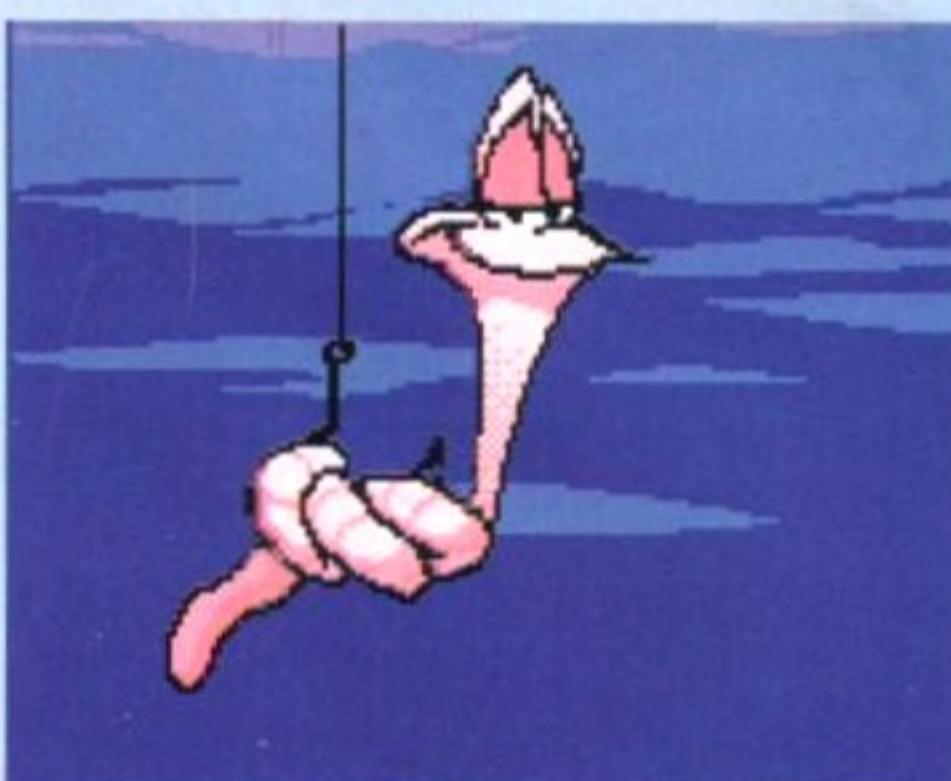
Manga is a growing industry in the UK. If you are interested in watching one of the films featured here, but you can't find them in your local shops, you can contact Manga Video on 081-748 9000. Also you can ask for details of the Manga club, where you can get hold of T-shirts, caps and other merchandise.

BAIT MASKING

ANIM

TELESCAN

The latest work from Amiga animation genius Eric Schwartz is also one of his shortest. As you probably know, Eric uses Gold Disk's *Moviesetter* program to put together his anims. This anim was originally put together on the Macintosh to demon-



Smug? Yep, that's Worm. Smug because he has a scary mask which he knows will frighten off all nasties...

PD Demo Zone



For your felicitation and delectation, **Andy Nuttal** has rounded up (well dug deep into the mail box, actually) a superb sample of delicious Public Domain demos – from gorgeous graphics and artis-tics animations to cute children's musical favourites.

INTERFERENCE

TELESCAN

DEMO



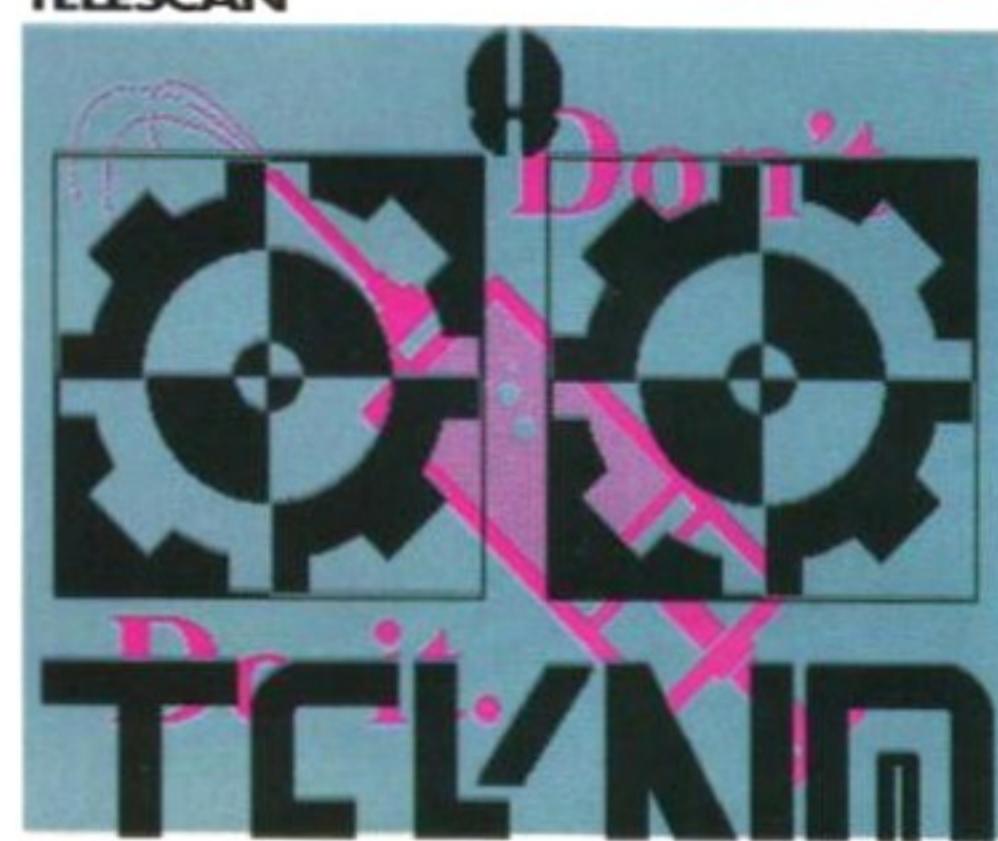
A train with attitude? Motorhead must have thought so – it is featured on their *Rock 'n' Roll* album cover.

Sanity present another megademo, with nothing special to offer apart from some superbly drawn images – most notably a horror train (see picture above) and a really good human skull. It also includes simple texture mapping which breaks up the usual demo that just features thousands of dots swimming around the screen. The soundtrack's not bad, using good samples, but it does get a bit repetitive after a few minutes. Yeah, it's good, but it doesn't break any new ground.

RETINA EURO ONE

TELESCAN

DEMO



Yep, it's another one of those trackmos that look great on screen, but here they look as dull as, erm, a dull thing.

Hey! Rave on! Got any E, man? Er, and other stereotypical comments supposedly spoken by ravers. Dear God, this demo is the epitome of mind-melding demos. That doesn't mean it's the best – *State of the Art* and *Jesus on E*'s are better and more varied – but it just doesn't stop flashing. Stroboscopic effects abound, while still images are flashed up on the screen in time with the music, which is rave-style and very repetitive.

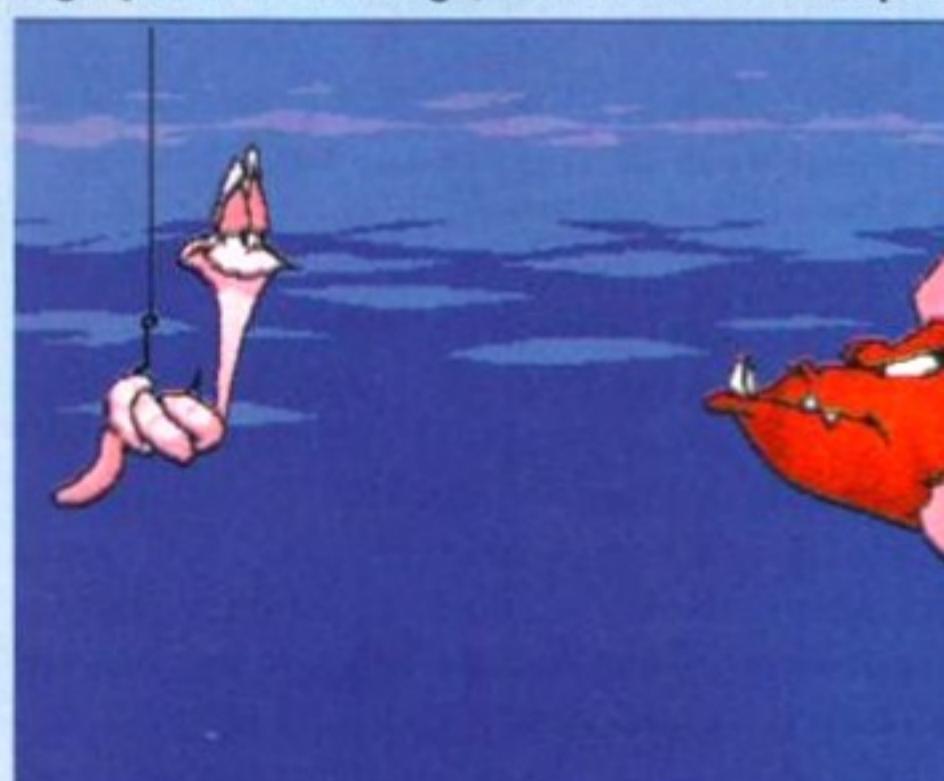
Continued overleaf

strate the powers of *Animation Studio* on the Mac – also by Gold Disk.

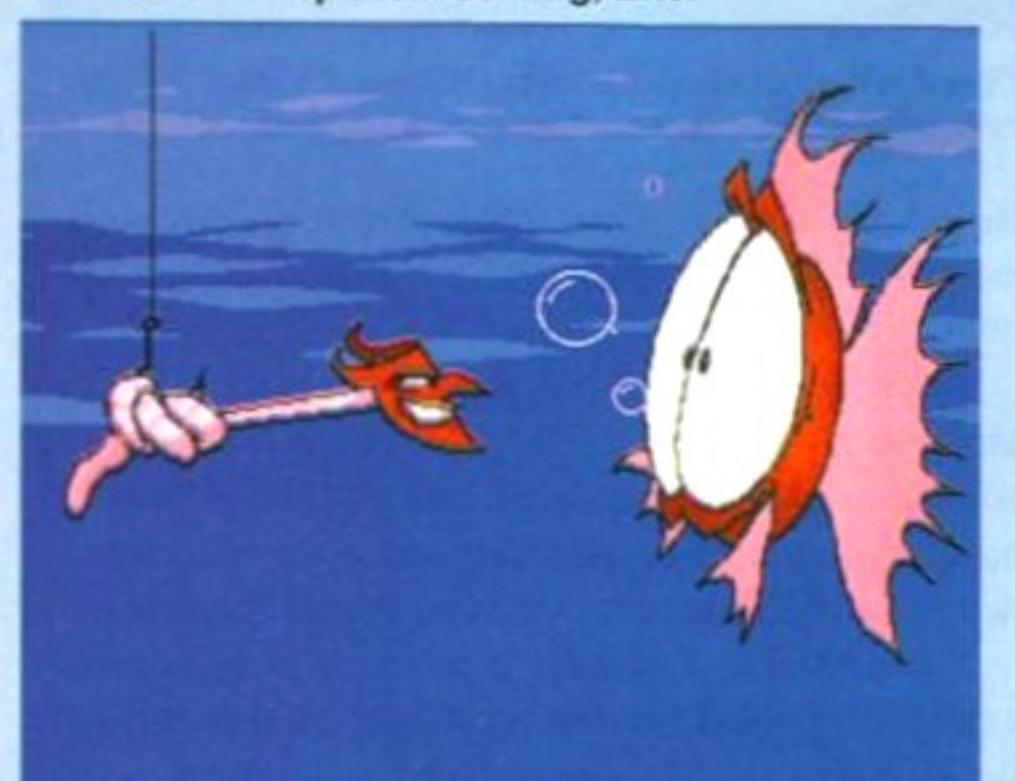
Anyway, now it's on the Amiga, and as you would expect from Schwartz the animator, it's very good. Having covered such subjects as fighter aircraft and the on-going romance between Amy the Squirrel and Flip the Frog, he now turns to that great pastime – fishing. Not the easy-going, relaxing 'sport' side of things, but the side that the poor,

innocent bait sees while sitting on the wrong end of the fishing line.

The little worm, as you can see from the pictures here, has a scary mask which he uses to foil the nasty fish with. Having frightened off two fish, he tries the mask trick with a third – except this fish is particularly laid-back and cool, and fools our poor hero with a cunning plan. Another brilliant animation – keep them coming, Eric.



...What, even a disgusting, snarling, many-toothed beastie like this one? I don't think so.



Call me a liar. It's clever how a good artist can turn around personalities – which one looks cute now?

REVELATIONS

CYNOSTIC PD, DISK P0028

Revelations is a one-disk slideshow full of images drawn by Rank, a member of the group Cryptoburners. These are the coders who brought you the excellent *ProTracker* program featured on last month's Coverdisk. Each image is depicted in high or medium resolution, which are not easy modes to work in anyway, but the level of detail and the use of colour are superb.

The main subjects of the slideshow are female and to Rank's credit the images are more sensual than sexual. Having said that, there is the odd nipple



It's incredible how an artist can do so much with a small palette. The whole of this slideshow was created using either 16 or 64 colours. Absolutely stunning.

SHOW



And likewise this one. Just look at the detail on the fabric – quite amazing, really. It doesn't stop there, though, there are another eight pictures on the disk.

or two on show, so I wouldn't recommend it for your children. Other images include a sword-wielding warrior, a strange 'thing from the pit' type creature, and in case you forgot that this is real men's stuff – an aeroplane. For a quick flash of the 16-colour artwork on the disk, take a peek at the little oval picture just above the Demo Zone headline on the previous page.

Although it's mostly copied by hand from original artwork, *Revelations* is an amazing feast of Amiga graphics. If you have an open mind, or an affinity for pictures of ladies wearing not many clothes, then take a look, because it's about the best you're likely to get.

THE QUEEN DEMO

HEX HEROES PD

DEMO



It's not a kind of Magic, Freddie. It's more a kind of, erm, Complete Abortion At The Hands Of A Digitiser, really.

Oh no! I'm not sure I can bring myself to review this one. Still, there aren't many new demos around this month, so I'll have to.

Anyway, the gist of it is that there are these Queen fans who have set up a PD house called Hex Heroes. Nothing wrong with that, of course – good luck to them. Unfortunately, they decided to produce their own PD disk as a tribute to the late Freddie Mercury.

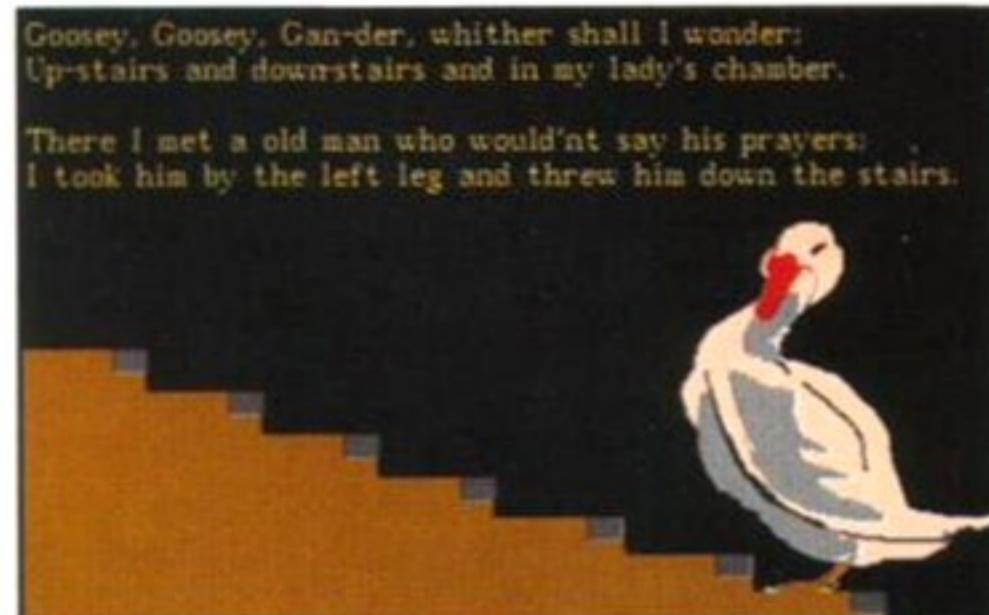
Aaaaaggghhh! I wonder how many people would really be interested in some poorly digitised pictures of Mr Mercury and his popular band in concert, along with some abysmally digitised images of video and record covers, and the video for *It's a Kind of Magic*.

Not many, I reckon. Not only that, but the self-styled 'Hex Heroes' actually have the audacity to charge a shareware fee of £2 for the disk! Utterly amazing. In a world where demo coders like LSD, Sanity, Cryptoburners et al can produce stunning high-quality products on PD, this doesn't even warrant the cost of a disk, never mind two quid. Freddie, bless his heart, must be turning in his grave.

CHILDREN'S FAVOURITES 2

17 BIT, DISK 2501

MUSIC



Call me twee if you will (you're a tree – Rich) but I like this. It has a kind of oldy worldy... (oh shut up – Ed).

Hooray! Although I never saw *Children's Favourites 1*, this disk contains five tunes which are a kind of 'musical box' rendition of popular children's tunes – Polly Put the Kettle On, Piggy Wiggy Wee, Goosey Goosey Gander, I Saw a Ship A-sailing By and There Was a Little Woman. No frills, no spills, just basic graphics to illustrate each song, and the lyrics so that you can sing along. It's a kind of basic karaoke, I suppose.

Don't laugh – this is an excellent disk that will keep kids happy for a while, and introduce them to the world of the Amiga at a very early age.

TOP TEN DEMOS OF THE MONTH

Just so that you know what's in and what's not we ask a Public Domain library to tell us their top-selling demos of the month...

CYNOSTIC PD

1. Cynostic AGA Slideshow vol.1	P0008
2. Snow Joke	A0025
3. A Taste of U4IA	S0057
4. Digital 'Lethal Exit'	D0041
5. Silents 'Demon Download'	D0104
6. Team Hoi 'Planet Groove' AGA	D0106
7. Quality Time	A0030
8. TRSI 'Wicked Sensation'	D0116
9. Adventures of Oscar the Lemming	A0031
10. Fanatix 'Audio Dreams'	S0098

WHERE TO GET THE DISKS IN THIS ISSUE

HEX HEROES PD: 22 Woodend Lane, Stalybridge, Cheshire SK15 2SR

CYNOSTIC PD: 85 Wyken Croft, Coventry CV2 3AD. 0203 613 817

TELESCAN COMPUTER SERVICES: Handsworth Road, Blackpool. 0253 22296

17 BIT: 2-8 Market Street, Wakefield, West Yorkshire WF1 1DH. 0924 366 982

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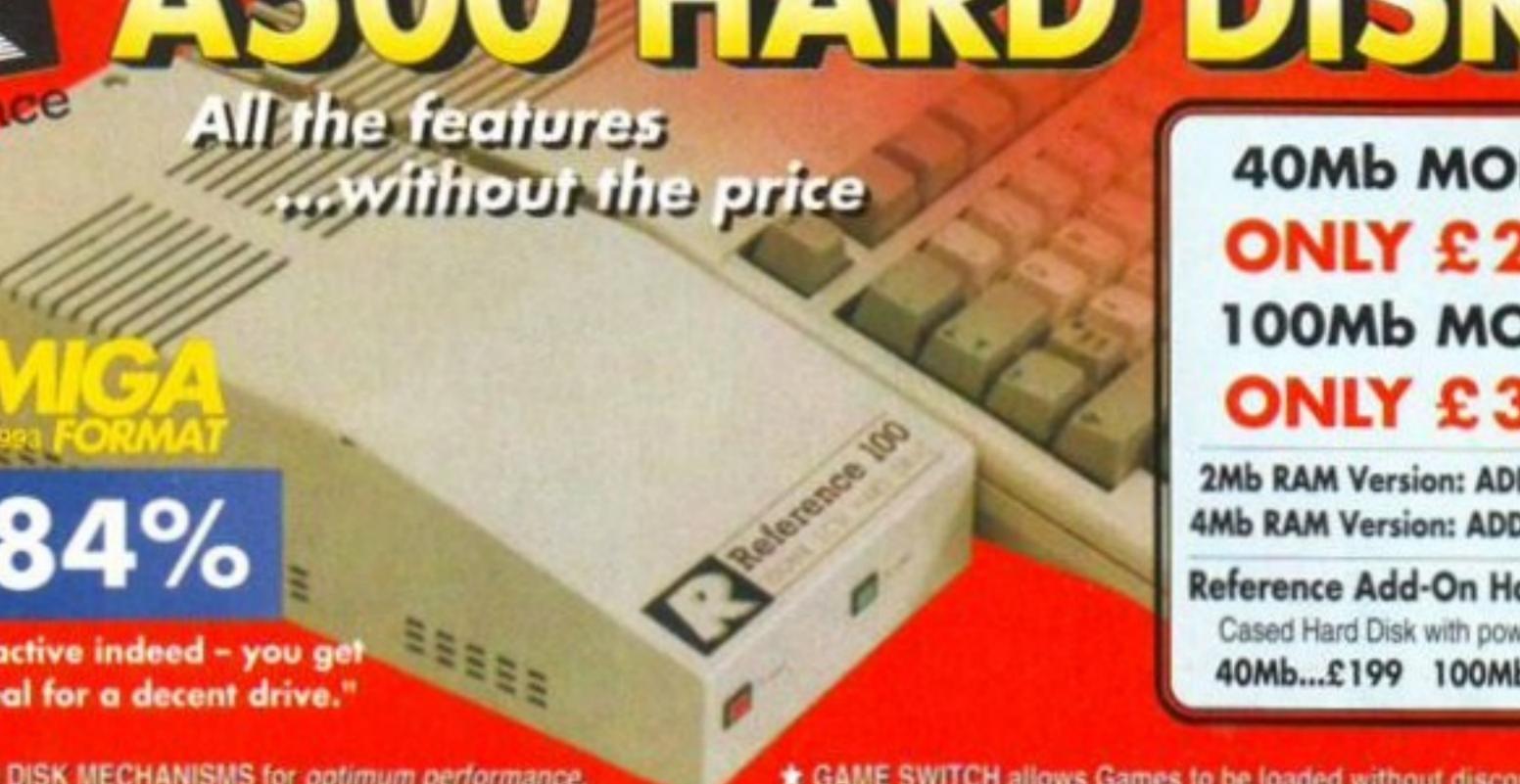
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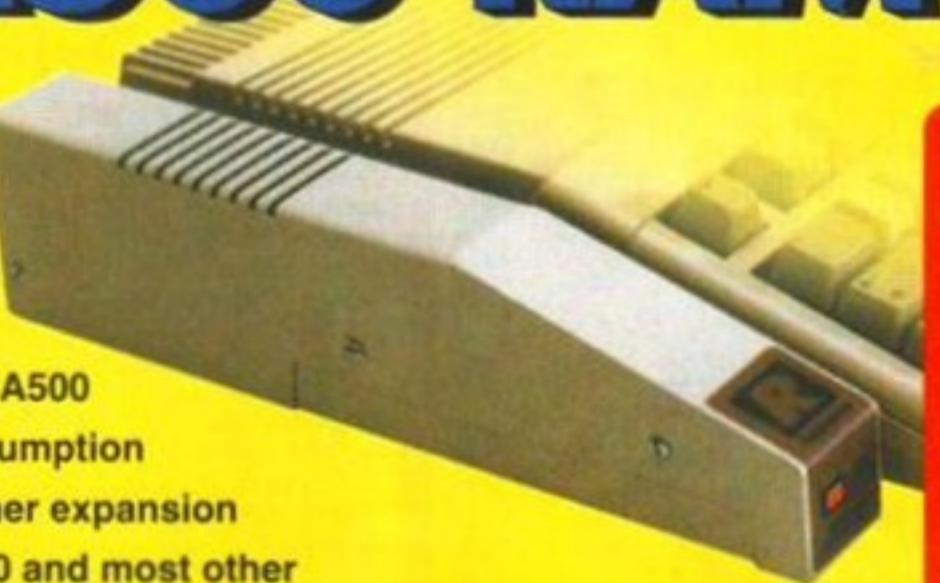
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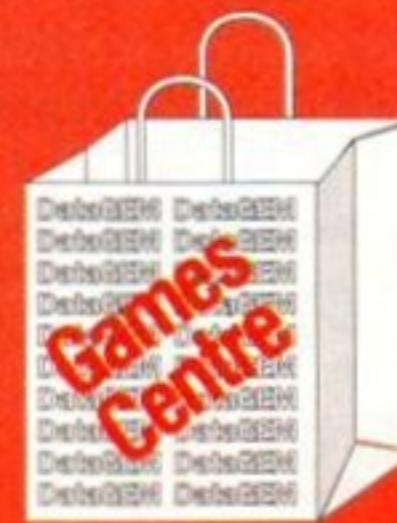
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SPOILT FOR CHOICE

FROM: COLIN YOUNG, GLASGOW

I currently own an ageing A500 with Workbench 1.2 and 3Mb of memory. The computer is mainly used for word processing, at least 80 per cent of the time, using *Kindwords 2* and now *WordWorth 2*. I was intending to buy an A1200 with an 80Mb hard disk, but am now considering the new A4000/030 due to its faster speed and extra memory.

1) Will all A1200 software run on the A4000/030?

As the two machines have become available within a short space of time, I would think that most software would. Simply because if somebody writes something on an A1200, they have the opportunity to test it on a A4000/030. If the A4000/030 had been launched a year later, then there would be more incompatibilities.

The CPU chips in each machine are different – very similar but not quite the same. So although I would expect some 'A1200 only' programs to be released, the vast majority should be compatible between the two machines. Programmers generally dislike factors which stop their software selling.

2) Will games run at the same speed, or will they become so fast that they are unplayable?

A well written game will use the extra power of the CPU to some degree – faster frame updates on flight simulations, for instance. A poorly written or unfinished game would either refuse to work at all, work but with bugs, run too fast, or run slower (it has been known – really).



F15 Strike Eagle 2 is very fast on the A1200 and A4000 – typing your name into the high score table is tricky.

3) Does the A4000/030 have the same fall back emulation modes as the A1200?

Yes. Exactly the same. But the CPU is still different.

4) Are there any reasons, cost aside, why I should not buy an A4000/030 in preference to an A1200?

One minor quirk is that the video connector on the A4000 does not seem to have a 12 volt power line, which means some expansions that plug in there do not work. If the expansion can have an external power supply to get its 12 volts from, or does not need a 12 volt power line, then it doesn't matter.

WHICH DISPLAY

FROM: JOHN LLEWELLYN, TAUNTON

At present my computer set-up consists of an A500 with a Mitsubishi TV acting as a monitor, via the

Workbench

Is there anyone who isn't considering buying an A1200 or A4000?

One or two, as **Pat McDonald** answers some technical letters.

SCART connector. I am thinking of upgrading my computer to either an A1200 or an A4000/030, but first could you please clarify a few details:

1) Will I still be able to use my TV with these machines, and if so what modes and resolutions will they work in?

With the A1200, yes, your TV should work fine. With the A4000/030, probably not, unless you can manually select SCART input on the television – usually the channel indicator swaps over to 'AV'.



This CBM converter lets you plug a 15-pin SVGA monitor into the 23-pin video connector common to all Amigas.

2) If I can't use my TV, what type of monitor would you recommend, for instance multisync, SVGA compatible, and so on?

There is a multitude to choose from – Commodore are launching new dualsync 1940 and 1942 monitors specifically designed to work with the A1200 and A4000. Assuming you want to work with an interlaced, flicker free screen, a VGA (with an Ami-VGA interface) will give you about 480 lines of display. A good multisync or SVGA, however, will give you at least the full 512 lines of PAL interlaced screen. There is a Commodore interface that takes the 23-pin output from an Amiga and converts it into SVGA 15-pin D Type SVGA.

Ideally, a monitor which can automatically sense whether it is getting 15KHz (non-interlaced/double scan) or 31KHz (interlaced/scan). If it can't sense what signal it's getting, can it be manually adjusted externally with a knob? The only real solution is to take your computer to a monitor shop and see what works.

3) I have heard that some monitors will not work in low resolution, non-interlaced modes. Which ones?

It is correct. The very expensive, 31KHz only monitors, such as the NEC 4D, are not suitable for displaying typical game screens – they introduce ghosting and flicker. If you don't mind flickery interlaced screens, but want rock steady arcade games, then a standard monitor (Philips 8833, Commodore 1084 or 1085) will do the job.

SWAPPED, LOCKED AND SILENT

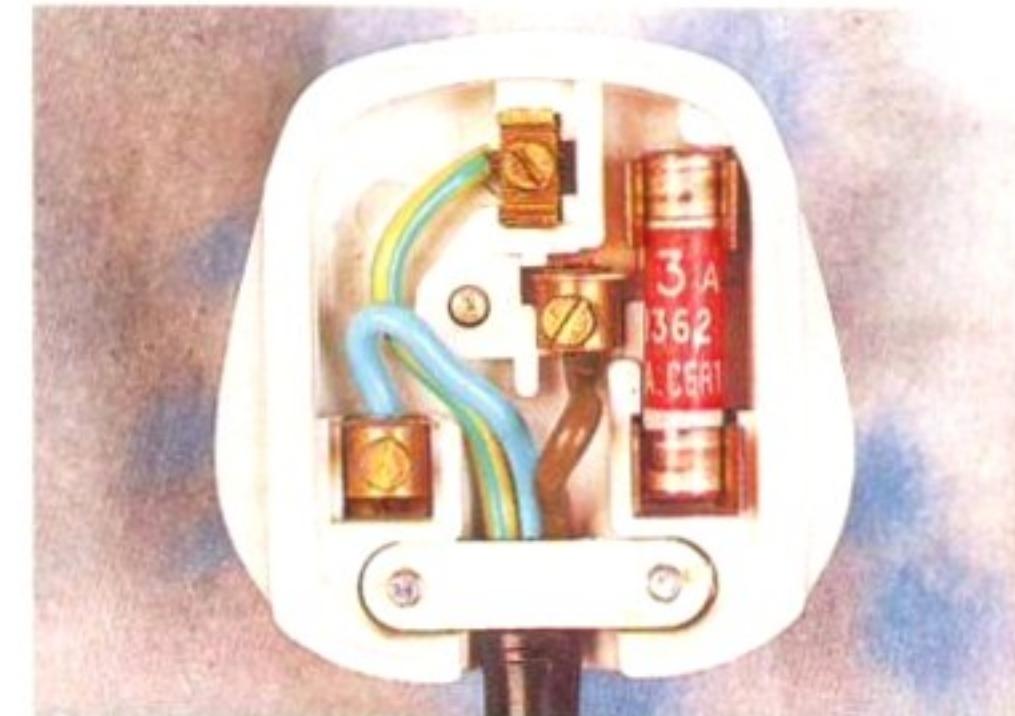
FROM: A R STEWART, LANARK

I've had a 1Mb A500 for about 10 months now, and it has developed a few problems. I've lost the sound on it, and on one mouse port the mouse buttons are switched over (same with a joystick). But the worst problem is that I am unable to do relatively simple procedures. An awful lot of stuff doesn't work beyond the introductory screens, although Workbench and some Anglia PD disks work for the most part.

For instance, say I'm trying to copy a disk as per your instructions, the Amiga asks for the source disk, reads up to track 79 surface 0, and then spins endlessly. The same occurs with most of my disks after a few seconds of working.

The disk copying phenomenon is nearly always a misaligned head in the disk drive. This is very common with older Amigas, where the head that scans across the disk cannot read a certain track, or always writes garbage on to a certain area. Either try changing the drive, or ask a repair centre to check the whole computer over properly. Quite a few places advertise in *Amiga Format* or our sister magazine *Amiga Shopper*.

A few sessions ago, my work was cut short by a power cut, which turned out to be a breakdown at the local power station. I checked over my fusebox, and sure enough a two amp wire was blown (I wish I had circuit breakers). Could voltage spikes like that cause problems with my computer? A friend at Scottish Power says that if this is so I have no recourse to the company. What precautions do you suggest at home computer level?



Always check the fuses in your plugs – 3 amp fuses are fine for the majority of computing power needs.

Well, it really depends on your power company, which in turn depends on where you live, and also on how much you want to spend. A £20 surge protector, built into a four way mains adaptor, is a reasonable start. That, together with the fuses in the fusebox, the plugs, and the power supplies which are already there, give a reasonable level of protection to your computer, printer, monitor and whatever else.

Continued overleaf

It's wise to turn off and unplug everything, and check the fuses in your plugs. Those are the ones that are usually the wrong values, in the UK at least. The higher a fuse in amps the more power it will let through (and hence the more damage it can do) before it breaks and cuts the power. Most equipment needs a fuse in the plug. If it doesn't, the chances are it's got an internal fuse.

MISSING HARD DISK

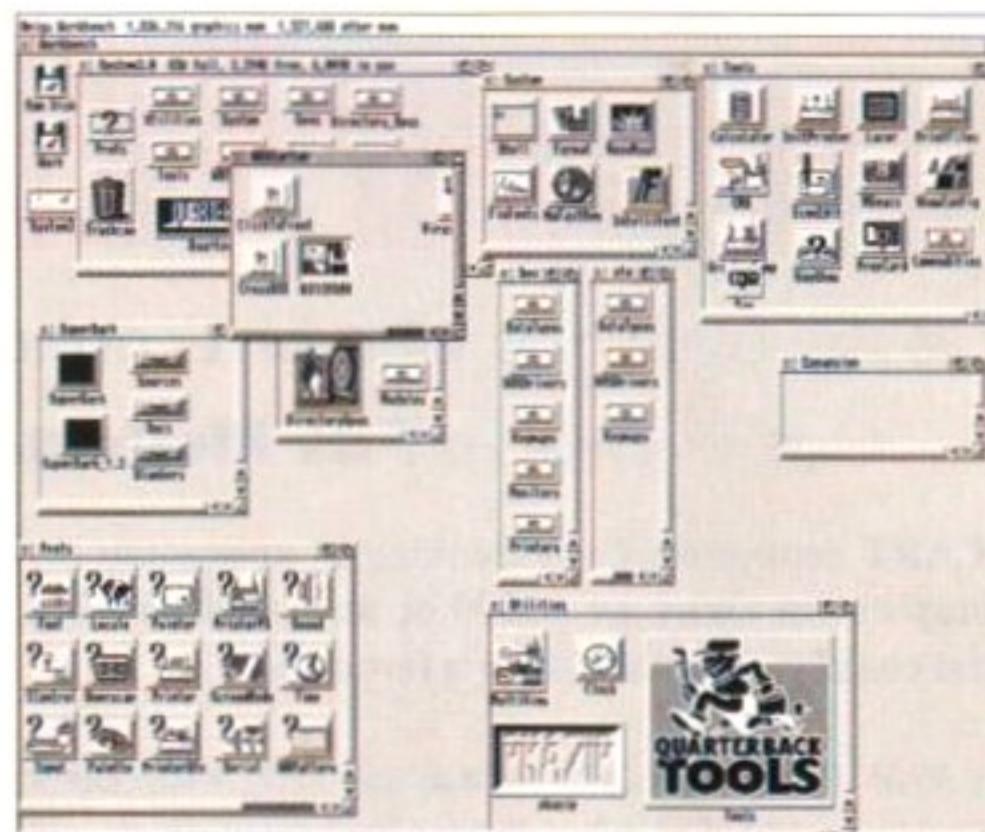
FROM: ANDREW GAUTON, WARRINGTON
Everything was fine with my A1200 with (Commodore approved) 85Mb hard drive, until I dragged a file from the Work partition on to a floppy disk. When I double clicked on the Work icon again, a message told me that Work was not a DOS disk!

Now I can't get at any files on my Work partition at all, and the Work icon has changed to "Work:????". Can you tell me what has gone wrong? How do I correct it? My Amiga came with GVP's Faaastprep 2.0, but I don't mind using Shell/CLI if I have to.

As the Amiga writes data on to a hard disk, it calculates checksums for the data on the disk. If the checksum doesn't match, then AmigaDOS marks the disk as invalid and will not let you write data on to it until it has been validated.

Up to Workbench 3, the simple answer was to Diskdoctor the drive. However, Workbench 3 does not have the Diskdoctor tool, and so you will need to get hold of some suitable disk toolbox software such as *Quarterback Tools* or *QBT Deluxe* from Central Coast Software (0101 512 3286650). We will be reviewing these programs shortly.

By the way, badly programmed software can cause a drive to become invalid (not saving a file properly). Also, Diskdoctor (should you obtain it from a friend with an older Amiga) has one side effect - files that have been deleted appear again.



You can view super hi-res screens on a TV, but the picture usually flickers so much that the writing is illegible.

not support all screen modes, and hence are unusable for some types of software, principally games.

You can see any screen mode on any kind of screen. However, the quality of the display may not be what you are used to. You can view a super hi-res screen on an ordinary television set - it is doubtful that you could read the writing on it, though.

The point is that you don't need a special monitor for any of the screen modes - but some screen modes look better with different kinds of monitors. The A1200's situation is not at all like the Atari ST, where to use high resolution software, you have to buy a high resolution monitor or the software will not run.

The Philips 8833 will be fine for games, but not very good for very high resolution displays. For that, a VGA or multisync monitor (like the Commodore 1960) is highly recommended. You are correct in saying that these hi-res screens have difficulty with very fast moving graphics - but your Philips won't.

I have heard of a software fix that helps. Can you confirm this?

There are many different monitor types on Workbench 3. About the best for you would be hi-res Interlaced Flicker Free. This gives you a good resolution, with no flicker on a VGA monitor. In other words, a flickerless display without a flicker fixer.

CD-ROM PLEASE

FROM: TIM SAXON, NORTHUMBERLAND
I own a 1.3 A500 with 1Mb of RAM. Do I need any further modifications or upgrades to fit an A570. Please tell me in English, and also, what is the difference between fast and chip RAM?



The A570 really needs to be plugged into a 1Mb chip RAM A500 for full CDTV compatibility.

What it boils down to is an A570 will only work properly with an A500 with 1Mb of chip RAM. How this is done was covered in AF issues 32-34. If you want somebody to do it for you, then Evesham Micros will

do the job (0386 765500). I also understand that *Amiga Shopper* printed the details in their last issue (27).

As for the difference between fast and chip RAM - fast RAM is only accessible by the processor. Chip RAM is available to all custom chips that need memory - Paula needs access to memory to play sound samples, Agnus needs access to memory so it can transfer data from one place to another (blitting), and Denise needs access to memory which stores graphic screens and sprites.

Also, disk drives have to have some chip memory (chip RAM) to temporarily store data as it comes off or goes on to a floppy disk. CD-ROM drives and some hard disks also need to use chip RAM for their buffers - that's why you really do need at least 1Mb to have a CD-ROM drive (like the A570) connected.

FASTER UPDATES

FROM: HAYDN SMITH, PENARTH
I am thinking about buying an A4000/030. I have a three-year-old A500 with a 1084S monitor which I mainly use for art and graphics, using programs like *DPaint 4*, *MovieSetter*, *3D Design* and *IntroCAD*. What I want is a fast, 32-bit machine, that will run most of my old A500 games while letting me do more in the professional graphics side.

Anyway, I've got about £1,500 to spend, and am thinking around the A4000/030, or a PC clone (486, 33/66MHz switchable) or possibly an Apple Macintosh. I used to use AutoCAD in a training centre, so I nearly (reluctantly) bought a PC until the A4000/030 came out. So to my questions:

1) Which monitor will display all screen modes without any problems?

Any multisync monitor capable of switching scan rates between 15KHz and 31KHz. The simplest one to buy is Commodore's own 1960, or a secondhand 1950 (they don't make them anymore). See the answer to the letter from J Holland for more ideas.

2) What is the best CAD package for the A4000? I've heard that XCAD3000 is about the best, and better than AutoCAD, but is it compatible with the AGA chipset?



This isn't XCAD3000 - this is 2000. 3000 has more power for 3D objects, and can output such models to Imagine.

Yes it is. It doesn't actually work in 256 colours yet, but it works fine with the AGA chip set. I understand that XCAD is being upgraded to let you edit in 256 colours, but that will take time.

3) How do I compare the speed of different machines? PCs are always rated in MHz. But a 25MHz A4000/040 is four times faster than a 25MHz A4000/030! Please tell me how to rate a machine in real terms, as Amigas seem to use MIPS to differentiate machines.

First, you must understand that the CPUs used in PCs and Amigas (or Macs) are different, made by two different manufacturers (Intel and Motorola). Therefore, any comparisons are misleading to a certain extent.

But here's a few rules of thumb. A 68030, running at 25MHz, will do computations at about the same speed as a 33MHz 386 or 486 SX. A 68040 running at 25MHz runs about four times faster than an 030 – about 20 per cent faster than a 486DX at 33MHz.

The reasons for these odd comparisons are twofold. For a start, the 68030 and 68040 are totally different in terms of the way they are built and designed, while at the same time being extremely compatible in terms of software. For instance, the 040 has a built-in FPU – the 030 requires an extra chip for this (68881 or 68882).

Second, the AGA Amigas have full 32-bit access to graphics stored in memory. The vast majority of PCs have 16-bit (or even 8-bit) graphics cards, which means that although they can compute maths quicker, it takes longer for them to output that information to you. The chief reason why XCAD is thought better than AutoCAD is that it updates the screen much, much quicker.

Finally, remember that an A4000/030 has no Floating Point Unit (FPU). If you buy software that uses an FPU, you will not be able to run it. But, the good news is that you can have an FPU fitted and you can upgrade the processor very easily on the A4000, either to a 68040 040 or (when available) an 68060. Upgrading a 486 PC to future standards is much, much more difficult.

SHOULD I STAY...

FROM: CARL THOMAS, BARNSLEY

I have got a 1Mb A500 which I have had for just over a year. Now, I was going to buy an GVP A530 42Mb hard drive/accelerator combination with 4Mb of 32-bit RAM. Then Commodore brought out the A1200!

Do I spend £650 on an A530, or do I buy an A1200 and use the extra money to expand it? The point is I'm not sure if the A500 has a future or not.

It depends what you want to use your Amiga for. If you want a machine which is going to have loads of games on it for years to come, get the A1200. If you want a serious, faster machine for doing lots of computations and raytracing images, then get an A530 with a 40MHz FPU.



The A530 makes an A500 work much faster than an unmodified A1200. However, remember that the A1200 can display much better graphics than an A500.

The serious arty side of the Amiga market will support the older Amigas much longer than the traditionally short shelf life games companies will. But you shouldn't expect things to change overnight – remember how many years did it take the Amiga to supplant the C64, for example?

Techno Babble

Do you know how to talk techie speak? Well if you don't then this little bit of jargon-busting should sort you out!

AA chipset: The new Lisa (video) and Alice (graphics) chips in the A1200 and A4000 allow many more colours on-screen than previous Amigas. Also called the AGA chipset (Advanced Graphics Architecture), it is impossible to fit the AA chips to older Amigas.

Anim Brush: A brush is a small section of a graphic screen, cut out with a paint program like *Deluxe Paint*. Anim brushes are different small images with the same dimensions – for instance, a bird flapping its wings or an eye blinking.

Blitter: BLock Image TransfER device. Used for copying large areas of memory from A to B, or to combine different areas into one single image. Widely used to generate large graphic shapes in computer games.

Bridgeboard: Commodore's own IBM emulating device, featuring a complete PC computer on a single card. Only fits A1500 and above machines – enables use of standard PC cards, such as sound cards, video cards (VGA/SVGA) and PC hard drives.

Chip RAM: memory accessible by the custom chips (Paula, Agnus, Denise) as well as the processor. Used to store all graphics and sounds. Can be used by programs too – with speed slow downs.

CLI: Command Line Interface. The program which enables you to type commands into AmigaDOS for standard operations like copying files or getting a directory. Shell is more commonly used now.

Copper: Co-processor. Used to generate subtly coloured backgrounds – this device is built into the Agnus chip and it can alter colours while the screen is being generated. Executes instructions at the same time as the processor.

CPU: Central Processing Unit. The decision-making chip, the one that tells everything else what to do. It can be interrupted by custom hardware if its programs are in chip RAM.

Fast RAM: Memory that's only accessible by the processor. Programs stored here run faster than those in chip RAM, because there is no contention between the custom chips and the processor.

Frame grabber: Device for capturing live video data and converting it into computer picture data. It doesn't require a still video signal. It usually gives much better results than a video digitiser, which does the same job, except that the video must be paused.

Freezer cartridge: Quasi-legal device for examining programs while they are running. Usually with many useful built-in utilities which help overshadow its dubious origins.

Hard drive: basically a big disk for keeping Workbench and all the serious software that you use. Works much faster than a floppy disk. More and more games are becoming installable on to a hard drive.

IFF: Interchange File Format. A standard way of storing pictures and sounds, invented by Electronic Arts and adopted by Commodore. A single standard – practically all art programs can load and save pictures in this form.

Kickstart: The name of the set of programs which are run when the Amiga is turned on. Also contains many library functions for use by programmers. Latest release is Kickstart 3. Other releases; 2, 1.3, 1.2, 1.1.

PD: Public Domain. Literally, software that is the property of everybody. PD disks can be freely copied by anyone, and you can also distribute them to whoever you want. The correct term is 'Freeware'. 'Shareware' (try before you buy) and 'Licenseware' (commercial and non-distributable) also come under the same rough heading.

ROM: Read Only Memory. Memory that cannot be altered. Widely used as the starting programs for computer systems that have just been turned on – ROMs remember things permanently.

RAM: Random Access Memory. Memory that can be altered and re-altered many times. Typically, it does not remember what it contains when the computer's power is switched off.

Scanner: Hardware device for reading flat pictures from posters, newspapers and so on, and converting them into computer graphics. Often used in desktop publishing to read in previously published images.

Script file: A set of commands which you would otherwise have to type into the CLI or Shell by hand. Saved as a text file. Learning how to use Shell or the CLI involves learning how to write script files.

Shell: More up-to-date version of CLI. Works in exactly the same way, but enables some flexibility in what commands are called via the 'alias' function. Also gives some hot-key combinations to enable some editing of previously entered commands.

Sound Sampler: Hardware device that converts electrical music signals (typically from a tape or CD player) into computer sound. Can also be used with a microphone to capture live sounds.

Sprite: A graphic object that is independent of the screen. On the Amiga, sprites are limited in size and colours. Typically used for mouse pointers, alien missiles, and so on.

Startup-sequence: The name of the script file, contained in the S directory, which is executed after a disk has booted. Typically contains just the name of a program to auto-run, but can be very complicated. Whatever the nature of the file, it must always be called Startup-sequence and live in the S directory.

Workbench: The set of programs which sets up a graphical 'point-and-click' interface on the Amiga. Much more friendly than the CLI or Shell, but not as flexible. Always has to be loaded from disk, which is slow but does enable much customisation. Workbench 3 requires a Kickstart 3 ROM. Workbench 2 requires a 2 ROM, 1.3 needs a 1.3 ROM and so on.

Zorro: This is the generic name for the Amiga's expansion connector. The A500, A500 Plus and A1000 had the original Zorro I; the A1500s and the 2000s have Zorro II; and the A3000 and A4000 have Zorro III. They are not compatible, hence the different expansions for different machines. The A600 and new A1200 have a PCMCIA connector instead.

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Flash ROM	-	-	-	-	YES
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Scalable Resident Fonts - in HP LJ III Emulation	-	8	8	0	8
Resident Bit-Mapped Fonts	11	14	14	16	14
AGFA Intellifont Scalable Font Technology	-	YES	-	-	YES
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EPSON FX Emulation Included	YES	-	YES	-	YES
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Cost per copy**	1.65p	2.00p	1.71p	1.64p	1.65p
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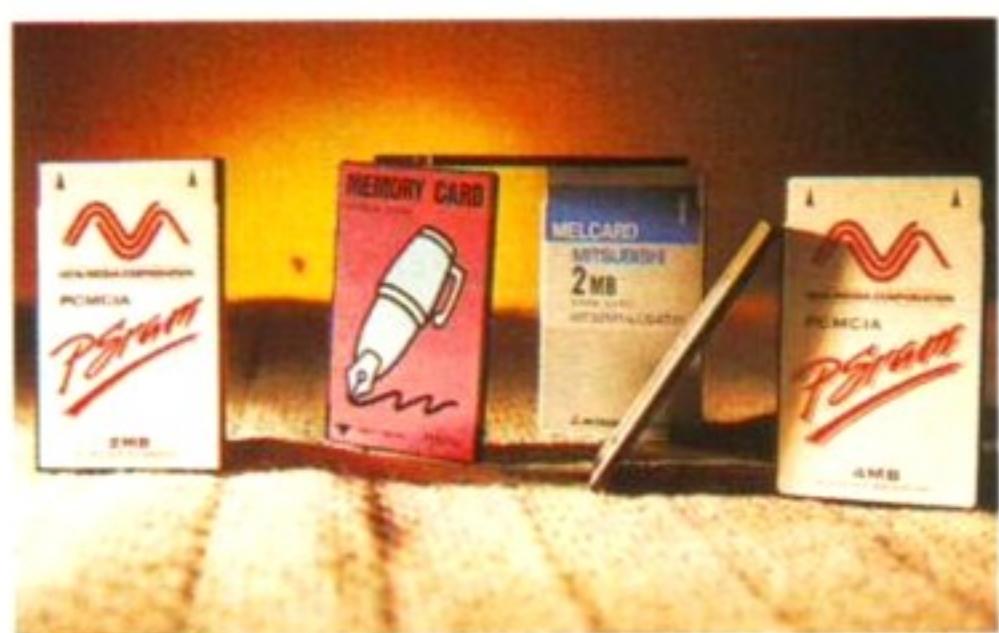
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The PCMCIA connector has 68 pins, whereas the old A500 has 86 pins. So some signals are missing on PCMCIA.

Q I want to upgrade from an A500 with a Zappo external hard disk to an A1200. Is there an interface or cable for the A1200 to let me plug the hard disk into it?

A No. The reason that A500 external hard disks don't work with the A1200 is that the expansion port on the left hand side of an A1200 is the PCMCIA type, which misses many signals found on the A500 interface. You cannot bridge signals which are not there without dismantling the machine and soldering directly on to the board of the A1200. In short, there isn't anyway to plug a cable or interface into.

Q What is a CAMG header?

A A CAMG header is a small part of an animation file, or anim. The CAMG is responsible, among other things, for setting the palette colour range of an animation. Strictly speaking, with an animation, you are only supposed to have one set of colours for the whole animation.

Some programs such as *Graphics Workshop* (on the AF 30 Coverdisk) let you change colours in the middle of an animation. The way they do this is to alter the CAMG header within the animation file. Other programs do not like you swapping palettes within animations, and if you try to load such a file into them, they report 'CAMG Errors'. So, if you want to change palette values within an animation, you have to have a full set of tools to do it with. I think the Anim Opcode 5 format invented by Sparta could do with a serious update, especially with the arrival of the AGA chipset.

Q Just what is a computer virus?

A A small computer program. Its primary reasons for existence are to survive and to make copies of itself, that is replicate. The sad fact is that most viruses are not choosy about which disks they copy themselves to, and so are responsible for many losses of programs and valuable data. Some deliberately destroy or hide data.

If you are using an Amiga without a good virus killer program, you have an increased risk of a virus getting into your computer and spreading around any disks you use in it. If you are running lots of pirated software, your risk level goes through the roof – viruses travel with pirate copies.

The simplest way to avoid virus infection is to switch off your computer for at least 30 seconds before you load a separate program. Also, write-protect all your floppy disks that never need information written on them. The majority of game disks fall into this category.

Answerfile

Simple questions, complex answers. Complex questions, simple answers. Here's the latest bundle of snippets from **Pat McDonald**.

Q I would like to be able to load TIFF and GIF graphic files on to my Amiga. Are there any good Public Domain programs that will convert such files to the Amiga's IFF standard?



HamLab uses palette slicing techniques to display more than 16 colours in high resolution. People often say that the pictures look better than on the PC they came from.

A *HamLab*, and the commercial *HamLab Plus*, are very good for this sort of thing, especially if you just want to look at the pictures – if you want to use them within, say, a desktop publishing set-up, then it is wise to go upmarket to the likes of *Art Department Professional* to do this sort of thing.

Q Can I upgrade an A600 to an A1200, or do I have to sell my A600 and buy an A1200?

A Upgrade means to physically alter a machine to a new specification. You cannot upgrade to an A1200, you have to go out and buy one.

Q How do I delete a drawer and contents from the Shell or CLI?

If you use Workbench a lot, then you can have a virus killer (like *Virus Checker* from John Velthuis) multitasking with your programs, keeping an eye out for the little blighters. *Virus Checker* is available from practically all good Public Domain libraries.



Virus Checker, having found a virus. It's worthwhile to have it running all the time, checking disks as you work.

A Use the delete command to do this. It is best if you give the full path to the drawer, and just put 'all' at the end.

Delete DF0:drawename all
If you had a drawer called Paperchain on a disk called Ivan, then this would do the trick:-

Delete Ivan:Paperchain all
Bear in mind that although this deletes complete directories and their contents, it doesn't delete the icon for the drawer.

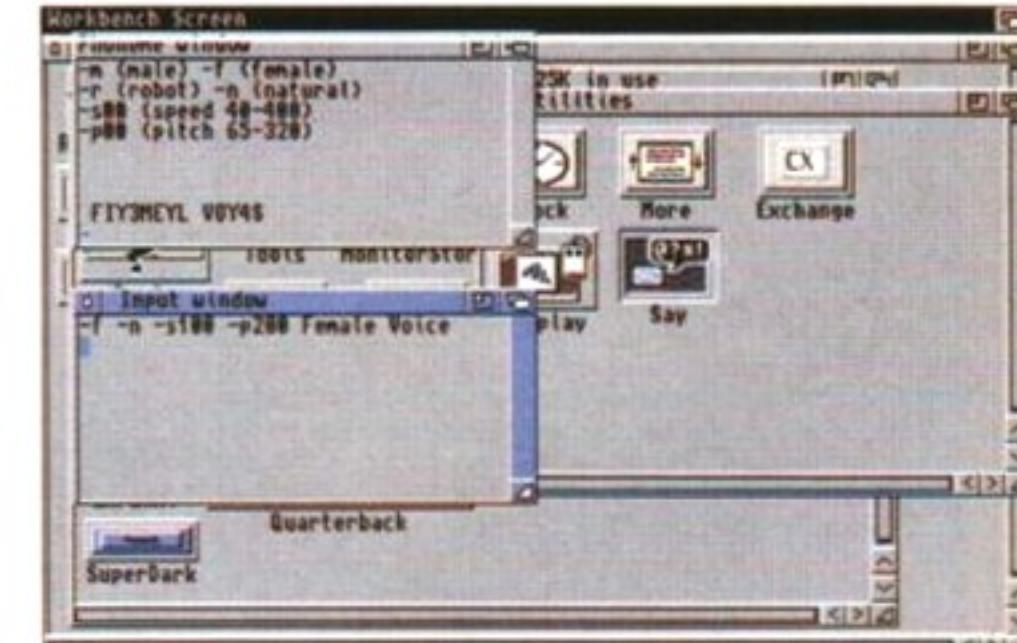
Q What is Datel's address? I have recently acquired a 4961X Datel modem and would like to obtain the instructions for it.

A Datel Electronics are at: Govan Road, Fenton Industrial Estate, Fenton, Stoke-on-Trent ST4 2RS. Tel: 0782 744707.

Q Please can you tell me when there will be an IDE CD-ROM drive for the A1200?

A That's a difficult one. IDE evolved to create simple, reliable, and cheap hard drives. It was never designed for CD-ROM use. If you mean when will there be an A1200 CD-ROM drive, then I would have to say that's up to Commodore, and it could be a good few years away. If Commodore have any sense, though, they will certainly have development machines tucked away here and there, so it can be launched with more titles than the A570 CD-ROM drive.

Q Look, PLEASE tell me how to adjust the voices on Say.



Type the switches into Say first, then put your message next. Just hit return to quit.

A There are a lot of different ways of using it. Be aware that the quality of the speech processor is a lot better under Workbench 2 or higher. This one pipes out your startup-sequence file in a dull robotic monotone. Type it all on one line into the Shell or CLI, typing just one space where indicated:

Say -r -s400 -p320 -x SYS:s/startup-sequence

The '-r' switch tells the machine you want a robotic voice; the '-s' switch sets the speed to slowest (100 seems the fastest, although 40 is the lowest value per

mitted); the '-p' switch sets the pitch to highest (lowest value possible is 65).

If you want some variance in the pitch, put in a '-n' natural switch just after the '-r'. If you want masculine rather than robotic, put '-m'. If you want feminine rather than masculine, put '-f'. The '-x' switch tells the say command to speak the next ASCII filename, which is where the 'SYS:s/startup-sequence' comes from. Put a different path and name for a different ASCII text file. So, if you want a male baritone, this is handy:

Say -m -n -s180 -p110 -x filename

One other point – to get out of the Say command (even if you double-clicked on the icon) just keep Ctrl held down and hit the C character. Ctrl-C or 'Break' is a common way of aborting Shell commands.

Q I have just bought a sound sampler, but I need more memory. I know that the Pro Agnus can help with this problem but I have an empty money box. Will the Fatter Agnus or any other chips help me?

A You get nowt for nowt, I regret. If you want some extra bytes for storage, then you need to spend money at some stage. The reason that people sell 'unpopulated' RAM boards is that other people know where to get the RAM chips to populate them. I'd rather pay for the whole lot in one go if possible.

Q I have *CrossDOS* and *Virus Checker* installed on my Amiga. Whenever I put a PC formatted disk into a drive, *Virus Checker* puts up a warning box that it could not read the boot-block. Is there a way around this problem?

A Yes. If you are invoking *Virus Checker* from a startup script, just put -i on the end like so:

Virus_Checker -i

The '-i' means that if the program cannot check a drive for viruses (can't read the bootblock of a PC disk) then it won't put up that annoying little window.

Q I am sick and tired of not being able to play *Lemmings 2*, and many other 1Mb games, on my CDTV. Can I just plug an A500 memory expansion into the back of it or what?

A No you cannot. But you can have a switch fitted to CDTV which turns off the CD drive, conserving memory for other programs. Judging from the letters I've had, it would seem to be a most effective way of getting lots of 1Mb software to work with a CDTV. Such a switch will cost you £12.99, and is available from CDTV Free (0388 813661).

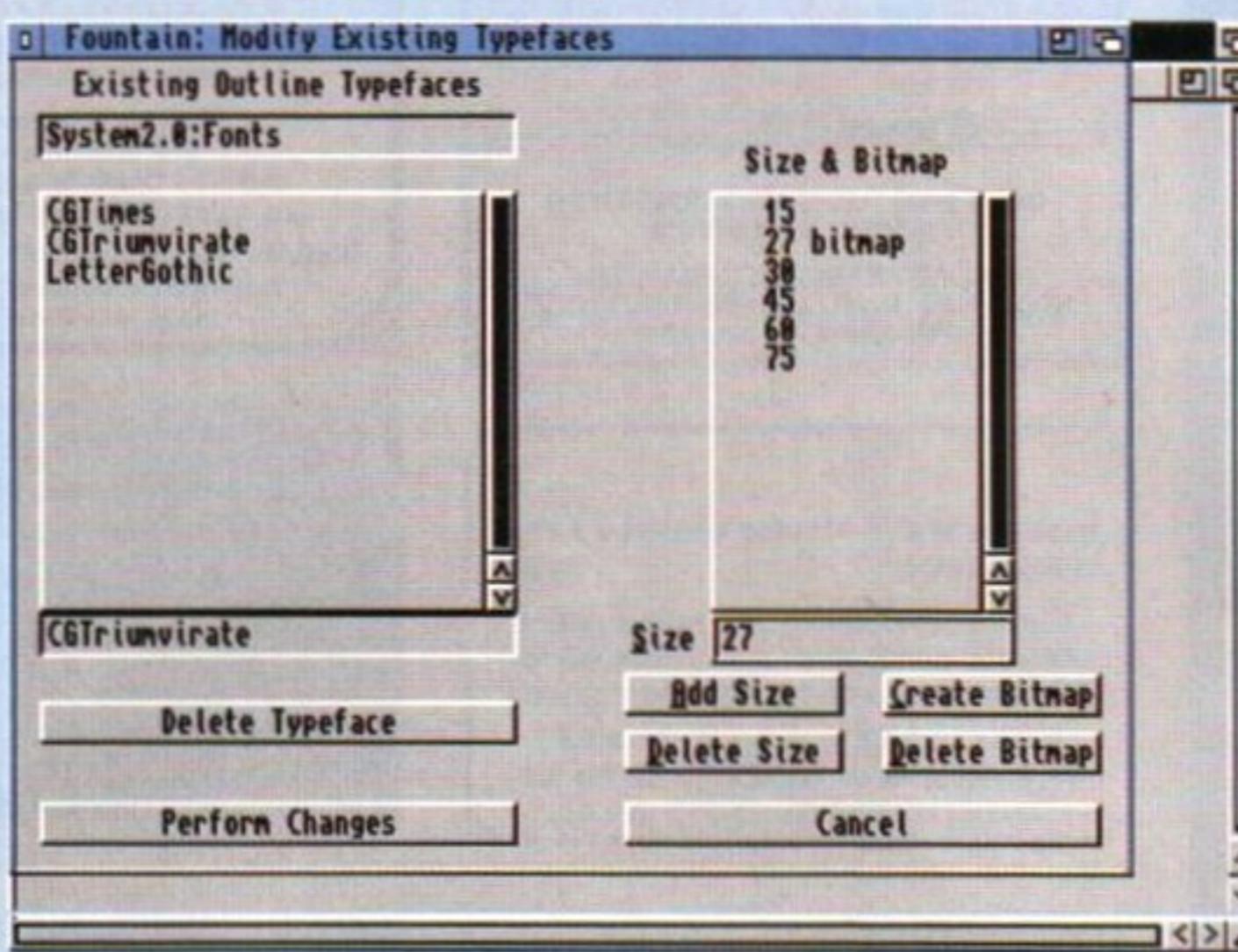
Q Is the overseas price for the AMOS manual the same as the UK price?

A If you live in Europe, add £2 to the price. For anywhere else in the world, add £3. These costs are just to cover the extra postage.

Q Where can I get Greek, Hebrew, Russian (Cyrillic), Mathematical and Japanese fonts for use in an Amiga word processor?

A All of the above and many more are available from Errol Madoo, of EMC Ltd (0255 431389). A word of caution though – all the fonts are Compugraphic type 1 fonts, which means you have to have Workbench 2 upwards or a compatible DTP program in order to use them.

Indepth Explanation Proportional Fonts



The Fountain program from Workbench 2, creating a new sized bitmap font from an outline font.

Be aware that in order to get this program to work, you must copy some files from the Fonts disk on to your system disk. This usually means floppy users making some space on a copy of Workbench, while hard disk users have a much easier time.

1 Font is another word for typeface – the shapes that make up printed letters and words. Rather than attempt to store all of these inside the Amiga, they are usually stored on disk, and read into the Amiga as required. You should have got a Fonts or Extras disk with your Amiga – this contains several additional fonts, although there are thousands of fonts to choose from.

2 Some programs such as *Deluxe Paint IV* and *Civilization* have their own customised fonts. If you are using a hard disk (which lets you have many more fonts on tap than a floppy based Amiga) be aware that some programs will put extra fonts in your Fonts drawer, even if you are not at all interested in collecting fonts. So it's always worth making sure that your hard drive has some free space for extra fonts.

3 Bitmaps are what you see on the screen, both on *Deluxe Paint*, DTP programs, video titler programs – the lot. The reason is that the Amiga has a bitmapped screen display. However, when you use a printer, the resolution is much, much higher than the screen. Bitmaps are not usually a problem until you try to print them out.

4 Desktop Video users tend to avoid using anything other than very large fonts. The reason for this is that people looking at video screens tend to keep their distance – to make words legible, they have to be very large. DTP users tend to use both large sized fonts (for headlines) and small fonts (for body copy).

5 Up to Workbench 2, only bitmap fonts could usually be used by the Amiga. However, certain desktop publishing programs could use outline fonts instead. Outline fonts can be easily rescaled up and down, from the smallest to largest sizes, without distortion. Scaling bitmaps always causes some distortion (the 'jaggies' or jagged edges). There are a few different kinds of outline fonts.

6 Apart from Agfa Compugraphic, the other readily available outline font type are Adobe type 1 and type 3. The only program I am aware of that makes extensive use of these is *Pagestream*, a

very popular DTP program. However, the *Professional Page* DTP program comes with a utility to convert between Adobe and Compugraphic font formats.

7 The reason for the differences between the way that Workbench 2 and 3 handle Compugraphic fonts is that Workbench 3 can read PC disks very easily. The Workbench 3 program *Intellifont* can read and convert IBM PC Compugraphic fonts into their Amiga equivalents. With Workbench 2, even if you have *CrossDOS* to read PC disks, it's still much more trouble to obtain fonts from PC disks.

8 In order to use outline fonts on Workbench 2 or 3, certain files have to be copied from the fonts disk to your System disk (the Workbench floppy for floppy users, your Workbench partition for hard drive users). The things to copy are: *Diskfont.library* (must go in the *libs* drawer); the *Bullet* drawer (goes in the *fonts* drawer); and at least one CG font from the *fonts* drawer. You must make sure there is space for all that on your Workbench floppy or hard drive before you begin.

9 One problem with outline fonts is that it takes the computer time and memory to rescale a font to a particular size. On large DTP documents, this can stop a page from printing out, because there isn't enough memory to both scale and print out. One way around this is to use Fountain or *Intellifonts* to save a bitmap font from a Compugraphic at a particular size. Then reboot, and change the layout of the document so it uses the smaller (in memory terms) bitmap font rather than the Compugraphic.

10 It is unwise to put all possible fonts in one place. In the short term it may not seem much of a problem, but the bigger a font drawer is, the longer it takes the Amiga to work out just what is available. It's a much better idea to have a few fonts that you use a lot available, and to keep the others on floppy disks. If the floppies are all called *Fonts*, then you can still load the fonts from inside a program. If possible, you should print out your fonts, to save time when you're choosing between them.

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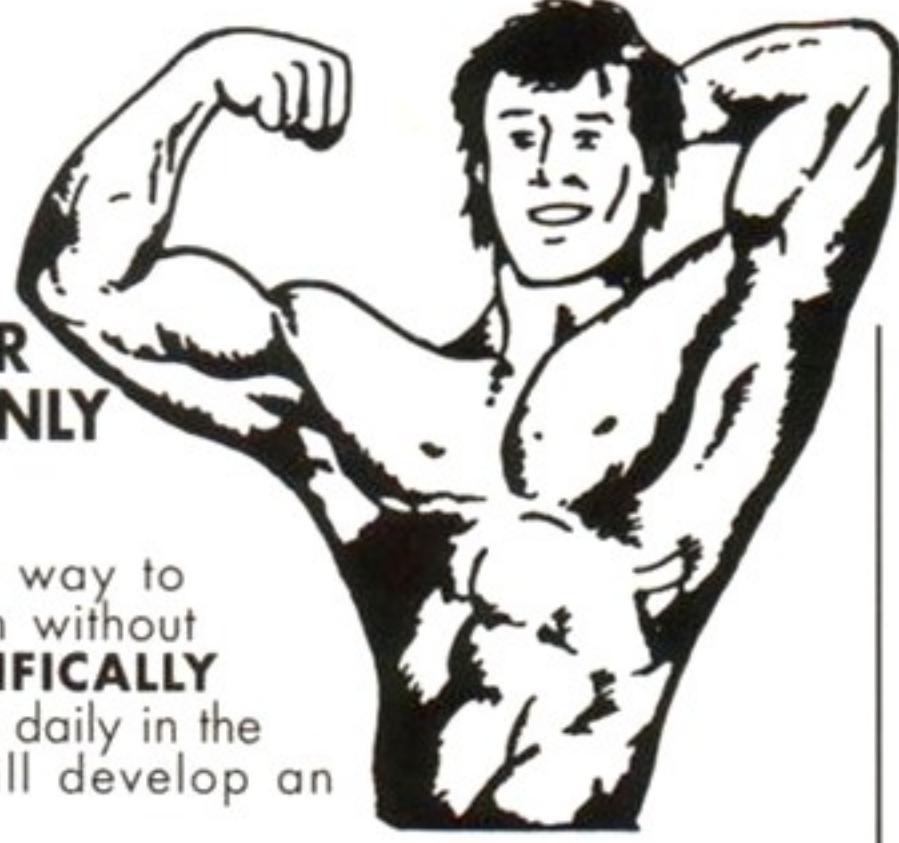
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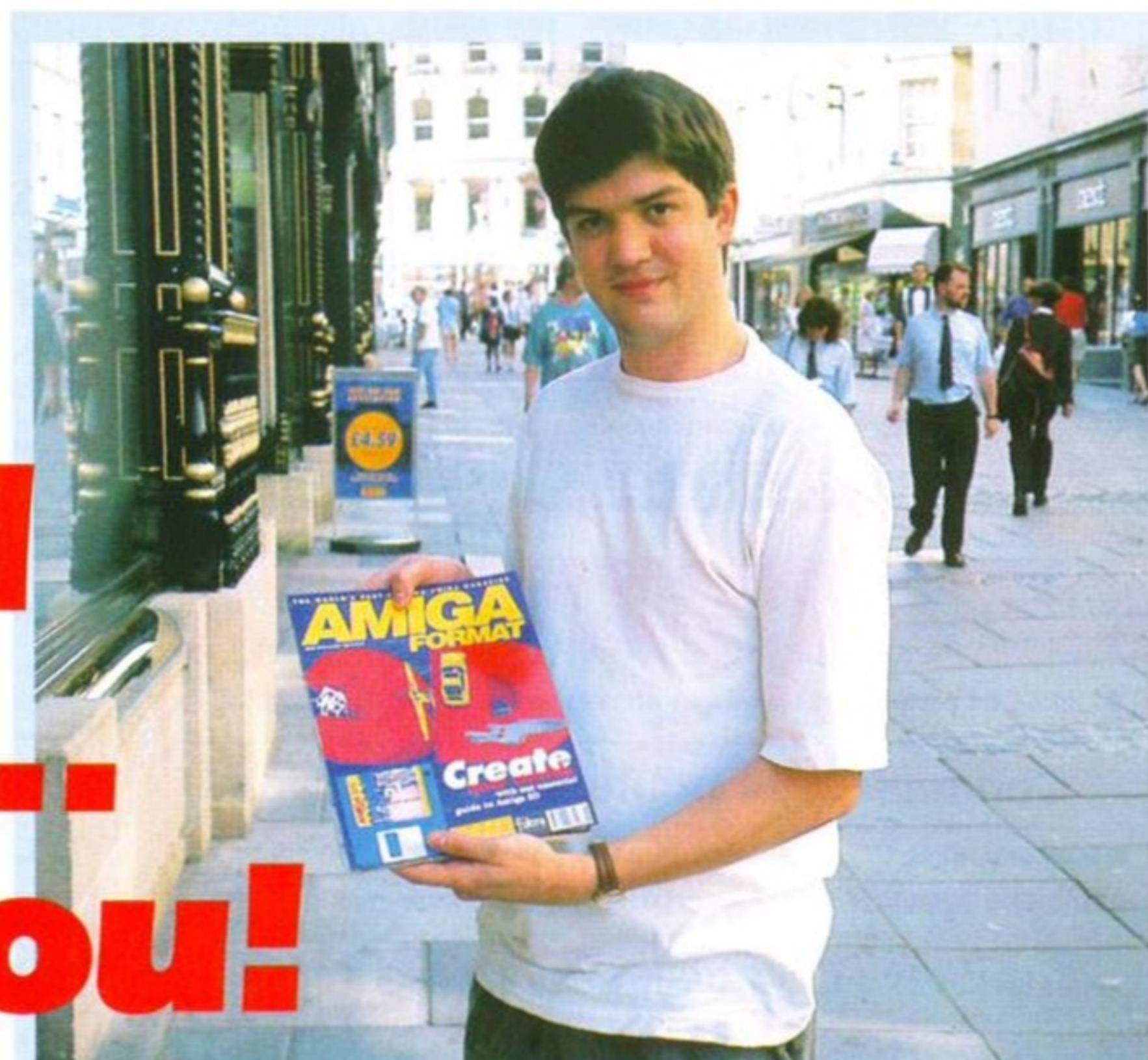
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Every year, we at **Amiga Format** conduct a reader survey to find out more about you lot. We do it so that we can make the magazine more relevant to what you want, but the results are always pretty interesting. Join **Marcus Dyson** and discover what kind of company you keep...

Pleased to meet... you!

EXCITEMENT ABOUNDS IN the *Amiga Format* offices when the questionnaire results begin to flood in. We all gather around Steve (the boy) Bradley's desk and rip open envelope after envelope, sharing and comparing responses. The reason for all this excitement is two fold. Firstly it's a bit of a reward for us, after months and months of hard work trying to bring you the best Amiga mag in the world, it's great to hear you say you like it. Secondly it lets us know a bit more about you, what you use your machine for, and what hardware and peripherals you have.

Studying the results helps us to decide what features, round-ups and reviews to do in the coming year. So come on a journey of discovery and analysis through this year's results, find out a bit more about other Amiga owners, and maybe even get a clue as to what you can



expect to see in coming issues of your favourite Amiga magazine.

Sex. Not surprisingly, you are a mainly male bunch. But the female contingent of our readership continues to increase. Since last year it has jumped 50 per cent to a total of 6 per cent of the total. We welcome you, and all new readers.

Overall the readership seems to be becoming less games orientated, and more interested in the serious and creative power of the Amiga. A couple of years ago 99 per cent of you said

that you were gamesplayers, now 6 per cent of you claim never to pick up a joystick. We've always maintained the Amiga's more than a games machine, but most people still like a good blast on the old leisure software.

The A500/Plus/600 still form the vast majority of Amigas in use, but the A1200 has made a very healthy debut with 19 per cent of readers now in possession of one. A further 18 per cent of you say that you are interested in getting an AGA machine in the near or medium future, a further 36 per cent of you making the leap eventually.

Those questionnaire results in...

What sex are you?

Male	94%	Female	6%
------	-----	--------	----

How old are you?

11 or under	3%
12-16	18%
16-18	15%
19-25	22%
26-40	34%
41+	9%

Do you play Amiga games?

Yes	94%	No	6%
-----	-----	----	----

What is your main occupation?

Full or part-time employment	48%
In education	42%
Not currently employed	8%

What model of Amiga do you own?

A500	46%
A500 Plus	20%
A1200	19%
A600	14%
A1500	4%
A2000	4%
A1000	3%

CDTV

A3000	3%
A4000	2%

Upgrade Kickstart/Workbench

Unsure about upgrading	19%
Have upgraded	18%
Planning to upgrade	12%
Don't want to upgrade	12%

Do you intend to upgrade to an AGA machine?

Yes, right away	5%
Yes, this year	13%
Yes, eventually	36%
Not bothered	26%

What's your favourite style of game?

Simulations	29%
Adventure/RPGs	28%
Strategy, god games	23%
Platform	22%
Driving games	17%
Puzzle games	14%
Shoot-em-ups	11%
Sports games	11%
Beat-em-ups	7%
None at all!	3%

Which kinds of hardware do you own?

Joystick	86%
Printer	67%
Extra floppy disk drive	61%
Monitor	49%
TV used as monitor	48%
Replacement mouse	44%
Internal RAM expansion	44%
Sound sampler	18%
External RAM expansion	16%
Internal hard drive (A500)	15%
Modem	12%
Internal IDE hard drive	10%
Video digitiser	9%
MIDI interface	8%
Internal SCSI hard drive	8%
Accelerator	7%
Genlock	7%
PC Bridgeboard/emulator	4%
CD-ROM drive	3%
24-bit graphics card	1%
Pseudo 24-bit system	1%

Which kinds of hardware do you intend to buy?

Extra floppy disk drive	23%
Printer	19%
Monitor	19%

A sample reader...

We thought it was a good idea for Steve 'the boy' Bradley to meet a reader in the flesh. So we sent him down to WH Smith, with a camera in one hand and a questionnaire in the other, and he asked the following to Amiga Format reader Duncan Watts...

What is your main occupation?
"I'm a student studying at Bath University, but I'm originally from Tregaron in Wales."

What Amiga do you own?
"I have an A500 with a hard drive which I've had for about a year now."

Do you intend to upgrade to an AGA machine?
"Yes, hopefully this year to an A1200."

What's your favourite style of game?
"Well, my favourite game is *Sensible Soccer*, though the computer teams are too easy to beat."

What would you like to see more of in Amiga Format?
"I'd like to see more hardware and peripheral reviews, and in game reviews it would be nice to see more comparisons between games."

Amiga Format readers have long had a reputation as thinking gamesplayers, and this is reflected in the kind of games you favour – sims, role-playing games and strategy games being the most popular genres, with platformers coming a firm third.

In terms of expansion you are a well equipped bunch, significant amounts of you owning printers, monitors, extra drives and RAM expansions. The number of you owning replacement mice would probably be significantly less if the one that was bundled with the A500/600 had been any good.

All this hardware hasn't stopped your lust for power though, and many of you are intending to upgrade further in the coming year. Top of the wish lists are floppy drives, printers and monitors, presumably for the minority of you who don't already own those pieces of kit.

Also high on the desirables are IDE drives (turn to page 56 now and you could win one) for all you new A1200 owners, accelerators (turn to page 38 now for a comprehensive round-up of Amiga speed machines), modems, video digitisers, sound samplers and genlocks.

It certainly sounds like a whole lot of you are about to get down to some serious creativity work with your machines.

The *Amiga Format* Collection has certainly changed the established patterns of software ownership. While last time we did a survey a mere 53 per cent of you owned a word processor, since we gave away *Scribble!* 76 per cent of you now have one. Database (36 to 63 per cent), Programming language (31 to 57 per cent), video titling (7 to 31 per cent) and DTP (21 to 44 per cent) software all showed large increases. Interestingly, full packages that we had already given away before the last survey (music and paint) showed comparatively less increase, while programs that were never given on an *Amiga Format* Coverdisk (comms, 3D and educational) showed virtually no increase. Although this is testimony to the popularity and success of the *Amiga Format* Collection, it rather obscures the pattern of software ownership for us to base features and round-ups on, since owning a piece of software no longer necessarily means that you use it or are interested in that area.

More useful to us is what software you intend to purchase next year, and that list reads like this... 3D graphics (which explains what all the accelerators are for), DTP, music and word publishers all feature highly on many

people's Christmas lists. The stunning news is that a huge 18 per cent of you are after a copy of *Deluxe Paint IV*, which must make Electronic Arts a very happy company indeed. And just to keep things as interesting as ever we'll be reviewing *Brilliance* soon, a new AGA paint package which could be a major competitor to *DPaint*.

As for the PD pool, around three quarters of you have dipped your toe in at least once, and the majority have done so more times. It's not surprising really when one considers the wealth of software you can get, and how cheap it is too. We'll keep pointing you in the direction of the best stuff in our PD Update and Demo Zone sections.

And now to the bit we really have to sit up and take notice of: what you think of the magazine and which are your favourite bits. This one is tricky to judge, and the numbers in the panel below are open to interpretation. What we did is add up all of you who said each subject was your main area for buying the mag, add on all of you who wanted to see more, and take away all who said they wanted to see less.

It's a strange way to do things, but it gives a pretty good idea what are the most popular areas. News scores top, but then the purpose of any magazine is to inform you of new products and services, so there are no surprises there. Next is the serious stuff on the Coverdisk, we're getting a bit squeezed by the size of most game demos these days, but we'll keep trying to get the balance right. And we've introduced a whole disk full of utilities for subscribers, so you can save money and get two disks as well!

Here at *Amiga Format* we think the Amiga is the best home computer, great for games, but even better for creative use. You lot obviously think the same. Rest assured we'll do our best to keep giving you what you want.

YOU guessed it... it's time for the survey results

Accelerator	18%
Internal IDE hard drive	18%
Replacement mouse	15%
CD-ROM drive	14%
External RAM expansion	12%
Internal hard drive (A500)	12%
Modem	12%
Internal RAM expansion	11%
Video digitiser	11%
Sound sampler	10%
Genlock	10%
MIDI interface	8%
Internal SCSI hard drive	5%
Joystick	5%
PC Bridgeboard/emulator	4%
24-bit graphics card	4%
TV used as monitor	3%
Pseudo 24-bit system	1%

Which non-games software do you own?

Word processor	76%
Database	63%
Deluxe Paint III	62%
Programming	57%
DTP	44%
Other paint	44%
Music	43%

Spreadsheet	37%
Deluxe Paint IV	34%
Structured drawing/CAD	32%
Video titling	31%
WP plus graphics	25%
Accounts	22%
3D graphics	20%
Educational	17%
Comms	8%

Which serious software do you intend to buy?	
Deluxe Paint IV	18%
3D graphics	12%
DTP	12%
Music	11%
WP plus graphics	10%
Programming	9%
Spreadsheet	8%
Accounts	7%
Other paint	7%
Word processor	6%
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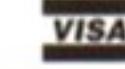
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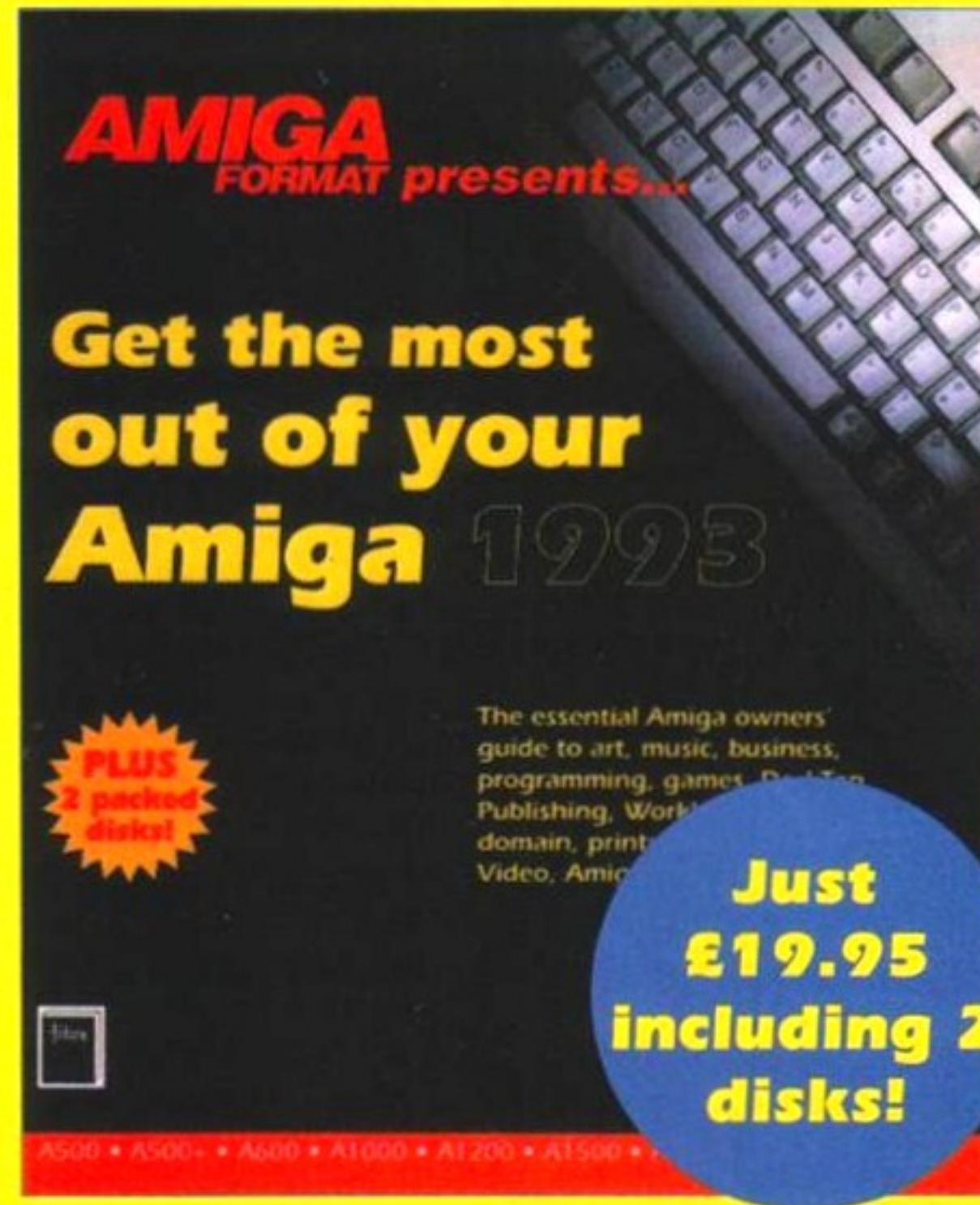
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(...Cont. on p2194)



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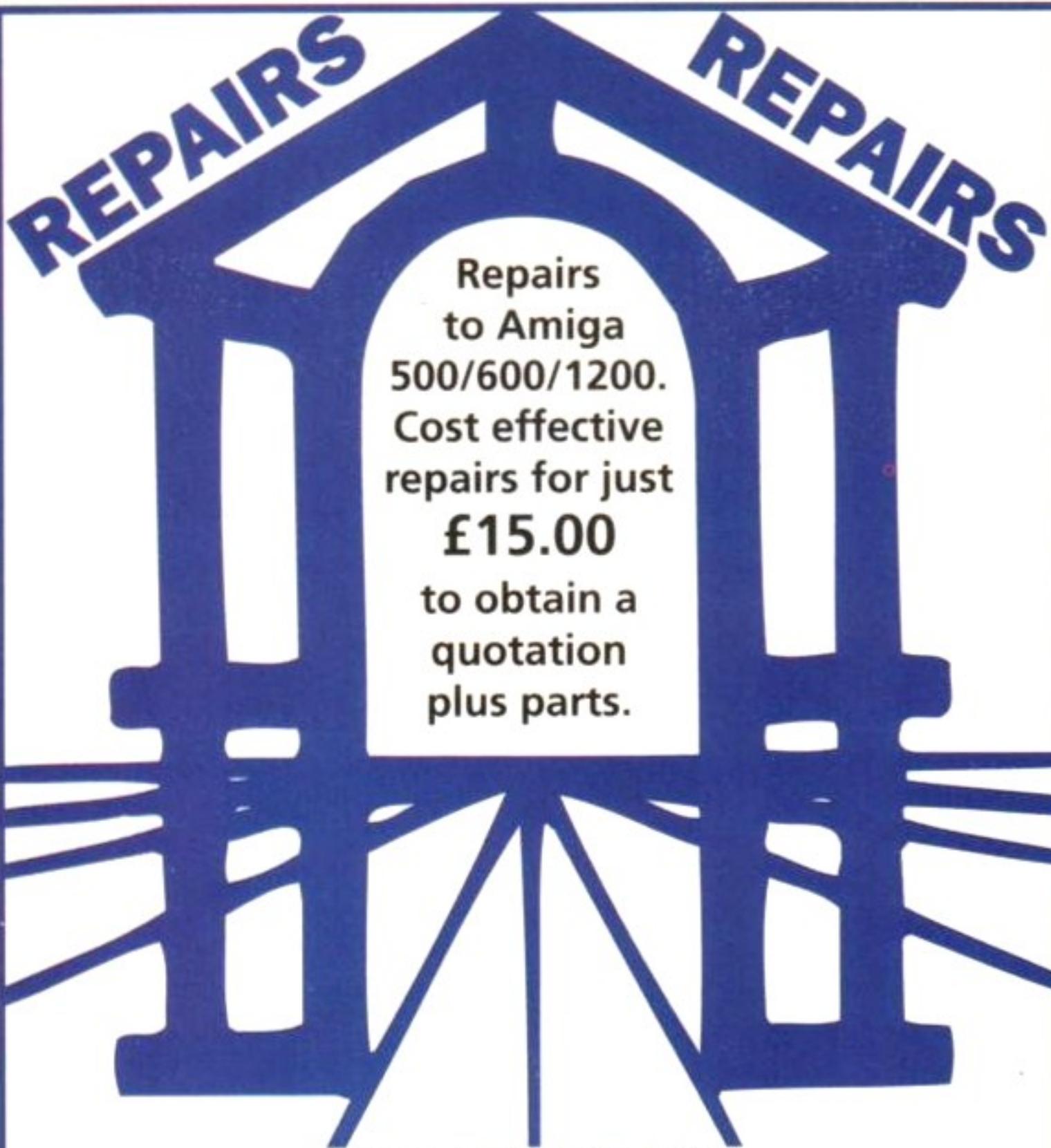
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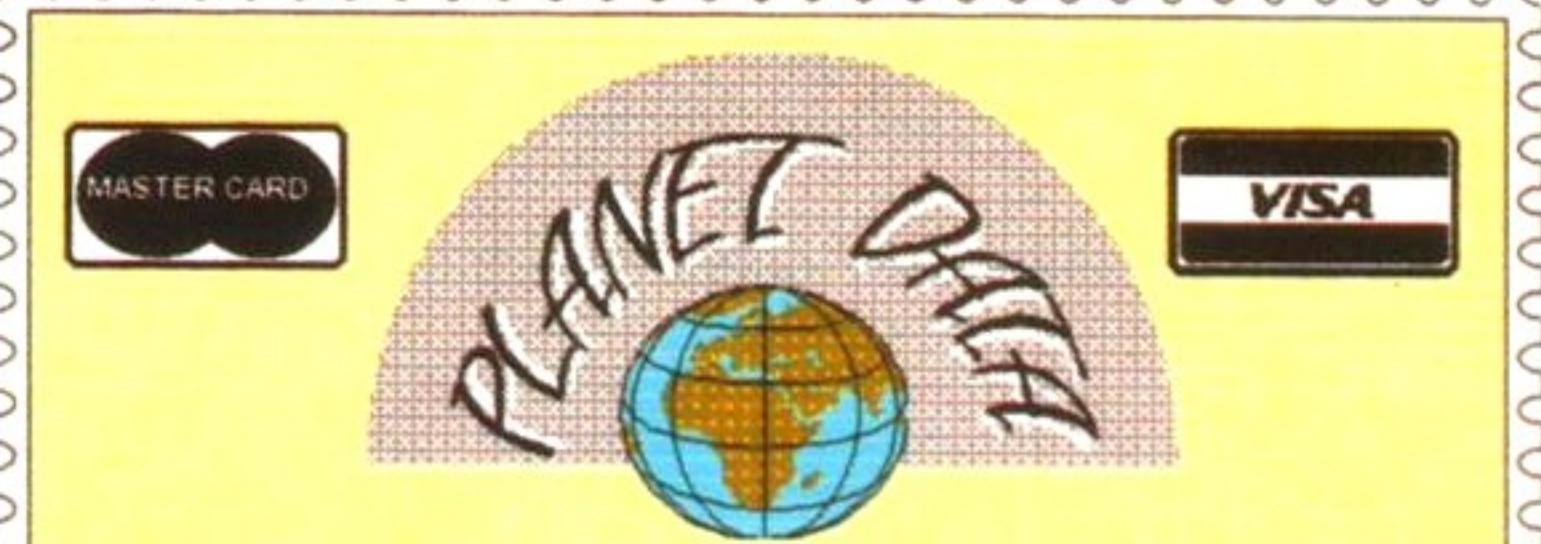
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• We are available for enquiries by telephone every Tuesday between 10.30am and 6pm, but please be patient because the lines do get very busy.

• Our advertising department can help with problems concerning companies who advertise in the magazine if you phone during normal office hours.

• Our subscriptions service and the **Amiga Format** Mail Order department are not in the same building. They can be contacted on 0458 74011.

WORKBENCH

If you have any problems with the technical side of your Amiga, with hardware or serious software, Pat McDonald will try to answer you in the mag. Or, if you have any advice for others or any handy tips to share, send it in and you could win a prize.

WORKBENCH, **AMIGA FORMAT**, 30 MONMOUTH STREET, BATH BA1 2BW.

GAMEBUSTERS

If you've just found the cheat mode, mapped out the levels or found all the passwords for the latest game, send the info to Nutts and you could win a prize. Or, if you're stuck, ask Helping Hand for advice - or solve someone else's problem and win a prize!

ANDY NUTTALL, GAMEBUSTERS, **AMIGA FORMAT**, 30 MONMOUTH STREET, BATH BA1 2BW.

LETTERS

The letters pages are there for you to air your views and share your opinions; please remember not to ask questions that should be in Workbench! Marcus is looking for thought-provoking or entertaining letters, the shorter the better. Prizes given for the best two.

LETTERS TO THE EDITOR, **AMIGA FORMAT**, 30 MONMOUTH STREET, BATH BA1 2BW.

COMPETITIONS

To enter a competition, write the answers and your name, address and phone number on the back of a postcard or a stuck-down envelope and send it in. You can enter as many times as you wish, but all entries must be posted separately; don't put several entries in one envelope together, or include entries with letters to any other part of the mag.

...COMPETITION, **AMIGA FORMAT**, 30 MONMOUTH STREET, BATH BA1 2BW.

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READERS' LETTERS

Letters

It's that letter openin' time of the month again! After spending several days submerged beneath a huge pile of mail, Marcus has emerged, his Swiss army knife thoroughly blunted with the following selection. If you want to see your name in print, send us a letter. The address is: Letters, **Amiga Format**, 30 Monmouth Street, Bath, Avon BA1 2BW.

PAYING THE PRICE

I am writing to you with some concern regarding CD software and floppy disk software. At present the current argument for games being priced at £25 goes like this. The software houses have to cover programmers' wages, musicians' wages, artists' wages, packaging, marketing and other overheads. Add to this the cost of damage done by the ***** called pirates. I am not knocking current prices, overall I think it is a fair sum in comparison to wasting loads of dosh buying a film and only watching it a few times.

Can anyone tell me how the software houses can hope to reduce the price of CD software when the games are bigger and a longer time is spent coding?

This leads to three possibilities...

- 1) Pirates are totally and blatantly killing off the games scene for anyone who can't afford a CD drive.
- 2) CD games will make no money and are really a bunch of software houses doing a lot of work for charideeee... but they don't like to talk about it.
- 3) Present disk-based games must be overpriced, so the software houses are taking the piss, but they don't like to talk about it.

Daryl Booth, Ramsgate

There's no doubt that piracy, if it remains so prevalent, will lead to the death of the games industry. But the softies have always maintained that once games are available on CD, and thus become effectively unpirate-able, that prices would drop. As you say, though, bigger games will require more work to, and thus cost more to produce. But CD games will be much easier to convert to all the formats (the new Commodore CD unit, Mega CD, Nintendo CD, FM Towns, CD-i 2, 3DO and a hundred others) so producers should be able to offset the astronomical

production costs against a potentially gargantuan audience for the product.

We recently took a look at Psygnosis' new Microcosm game, it's out on the FM Towns in Japan, and will appear on (what they are referring to as) CDTV 2 late this year. While it is obvious that lots of work has gone into the production, they are bandying figures of well over 20 man years, they are also talking of issuing it at around the £70 price point.

£70 for any game on any platform is a joke. If the softies don't come through with the goods, and deliver CD software at the same, or a lower, price as existing floppy disk games, they will show themselves as the cynical profiteers some people already say they are.

SISTER REACT

After my brother has bought your magazine, played the Coverdisks a few times and filed them away in the ultra neat disk file (which I can never find anything in) he resigns the issues to a life of solitary confinement under his bed. Only returning to check the well thumbed Zool review in issue number whatever-it-was.

So tell my darling (pass me a bucket, please) brother that it's my Amiga too. Even if I don't have a clue what RAM or CLI is. It doesn't really matter if I can't work Workbench. It's the games I like - New Zealand Story is an old favourite.

So, dear brother, please put the AFs back where they can be enjoyed by all. Like in the bookcase, on top of the computer, or wherever normal people put them. Not under your bed.

Elaine Gibb, Ayr

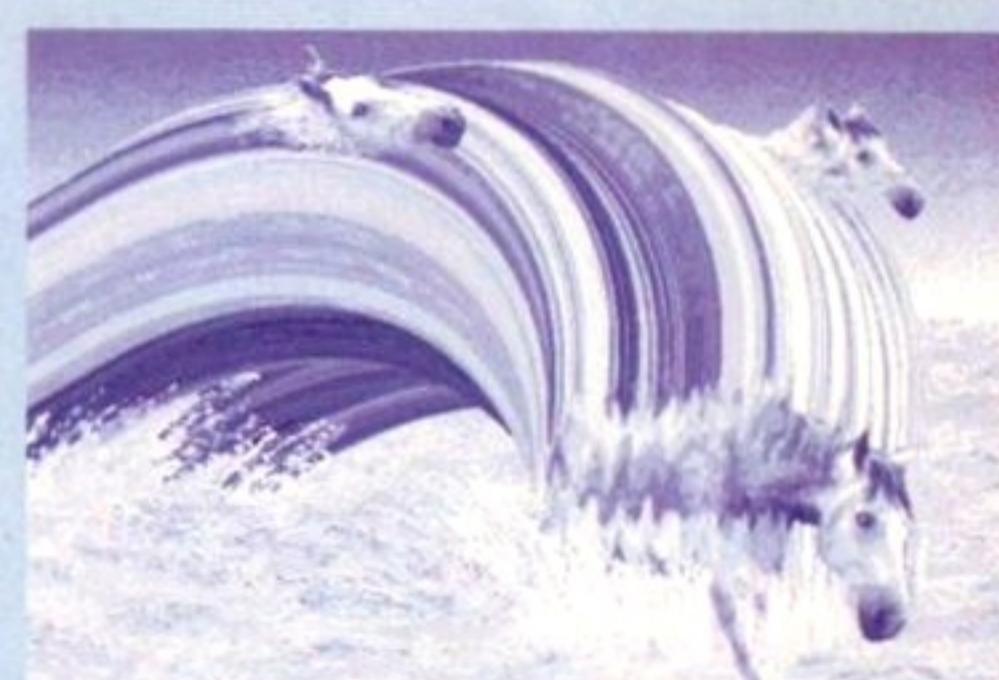
Please don't hide Amiga Format under the bed, people might get the wrong idea about what kind of mag it is.

Continued overleaf

Gallery

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Got a picture you're proud of? Send it in, see it in print and win an **Amiga Format** binder! Since Letters is where you get to contribute your words, we thought it would be the perfect place to see your pictures on display too. The best image every month will win a huge (and we're talking big here) poster printout, courtesy of Max Graphics of Cardiff - worth a massive £80. Send your entries on a floppy disk to The Gallery, **Amiga Format**, 30 Monmouth Street, Bath BA1 2BW.



Sea Horses by Wayne Grover of Chingford.

RADIO AGA

Being an AGA (A Great Admirer) of AF, I yesterday bought the June issue and read AGA (A Good Article) on the new A4000/030, and then the magical competition to win one!

What AGA (A Great Asset) that would be to own. I set about answering the competition and found AGA (A Gruelling Array) of questions before me, most answers could be found from the previous article, but question seven needed AGA (A Good Answer) to stand any chance. Being an A1200 owner I first set about AGA (And Glanced Aimlessly) through the two pointless manuals supplied with my machine. No joy there, so I set about searching through my back issues of *Amiga Format*. Finally, after AGA (A Gallant Attempt) I found it in AF43, Page 43. It read AGA = Advanced Graphics Array. I filled out my postcard and sent it to you.

AGA (A Great Achievement). Today I went out and purchased the *Amiga Format Special* issue 4 only to find out in the first pages that our friend AGA according to you lot now means Advanced Graphics Adaptor. I duly fill out another postcard and return home to find that my friend has found AGA in his *AF Special* issue 3 and it means Advanced Graphics Architecture. I give up! Maybe the correct answer is AGA (Any Guess Acceptable)!

Martin Brand, Coventry

Oh dear! That competition. Not only are there a great array of questions, but some of them were a tad difficult to answer. We asked about the relative speed of the A4000/030 to the A1200, but didn't print a SysInfo screen. We asked who was managing director of Commodore and then he went and resigned. And we asked about the illusive meaning of the AGA TLA (three letter acronym).

Don't worry though. We have been very understanding in our marking of the competition. The winner will have been picked by the time you read this, and we'll be announcing who it is in the next issue.

PD PIRACY

I would like to talk about the Public Domain companies selling demos. Do you think that the PD companies have the right to make money from other people's work by selling demos, often against the producers' will? I am asking this because I know demos contain a screen which states that PD companies must ask for permission from the authors before selling it to the public. An increasing number of demos state they must not be sold under any circumstances. PD companies continue to sell these demos without permission.

Of course the PD libraries may argue that they are making the producers of the demos famous by spreading their work for them. But demos are spread most efficiently throughout the demo scene among real

enthusiasts – the people who make up the demo scene and keep it going. I'm not saying all PD libraries are offices full of losers. There are several like 17 Bit, for instance, who ask for permission before selling demos if that is what the authors wish. Good PD companies make a link between the demo scene and the public to provide the public with cheap software, even if it's six months old before the PD companies get hold of it.

Detinator of Destiny

Of course we think it's wrong for PD companies to distribute people's work against their wishes. But it's a bit rich for the people who are often most involved with the theft of commercial software to start getting upset if they are treated in the same way. To stand against one form of piracy without condemning all forms of software theft, is hypocrisy of the highest order.

If the so called demo scene wants to be exclusive and not communicate with the rest of the Amiga community, so be it, that is your choice. Here at AF we:

- a) Like demos, and wish that the people who create them would give most people a chance to see them.*
- b) Don't agree with PD shops stealing demo writers' work, and urge shops to take the same kind of approach as 17 Bit obviously do. Nor do we agree with hackers stealing games programmers' work.*
- c) Think everyone should love one another, hold hands with your brother and get down, right now!*

MISS TAKEN IDENTITY

Quality Time, by Eric Schwartz, stars Clarisse the cat, not Amy the Squirrel as stated in *Amiga Format* 47. The same is true of *A Day at the Beach*. Does she look like a squirrel to you? Have you ever heard a squirrel say 'purrfect'? Amy the Squirrel star of *Amy Vs the Walker* and *At the Movies* has never been to the beach.

I demand an immediate apology to all involved in this terrible mix up.

James Whiteman, Hoddesdon

You are quite right, it is Clarisse the Cat, but then zoology never was Nutts' strongest subject. We offer sincere apologies to both Amy and Clarisse for the mix up. But how come you know so much about Clarisse's personal life?

NOS DOT!

I currently own an Amiga 600. I noticed while working on my Grandma's A600HD that NDOS: disk games, such as *Kick Off 2*, do not run off the hard drive. Why not? Would getting a SCSI drive solve this problem? What hard drive would you recommend? I want a 60Mb one, but owning an A600 seems to be a disadvantage when buying peripherals.

S Whyte, Newmachar

There are two reasons why your games won't run from the hard drive. One is because the games don't use the Amiga's Disk Operating System, or DOS. This is because some programmers believe they can make games faster and better by programming directly to the computer hardware, these are Not-DOS disks, or NDOS. These disks won't run from a hard drive.

The other reason is that if a program can be copied on to a hard disk, it can also be copied on to another floppy and given, or sold, to your friends. This, of course, is piracy and the programmers tend to copy protect game disks to prevent this. A SCSI drive will be no more use for running these games than an IDE one.

Some games, an increasing number in fact, will install to your hard drive, so we still recommend an HD as a good thing to have.

Rather than being at a disadvantage from owning an A600, you have a huge array of hard drives available to you. Read our IDE round up in issue 44 (if you don't have a copy turn to back issues on page 150 now) and you'll see just what we mean.

QUIET PLEASE

Could you please ask your readers not to fly their demos of *B-17 Flying Fortress* early in the morning. There are people trying to sleep out here!

I can't get a decent night's kip with all those bombers flying over my house.

Frank Mosch, Antwerp

OK. Everybody, your grounded till 08.00 hours.

DELLING BANJOS

Could you please answer the following three life threateningly important questions.

- 1) Why does Mev Dink of Vivid Image look so much like Tony Blackburn? After comparing his picture with a video of *Noel's House Party* I noticed a startling similarity. Does Mev lead a bizarre double life, or is Tony Blackburn an extraordinarily talented programmer?
- 2) Does anyone know the difference between the two guitars in the Carlsberg advert? Am I just tone deaf or do they both sound the same? For God's sake someone tell me which is which!
- 3) Why is *Amiga Format* so mind bogglingly good? Is there something in the water down there in Bath or are your team super human intellectuals, extremely witty and marvellously talented?

Daniel Griffin, Whitwick

1) Mev Dink and Tony Blackburn are definitely not one and the same person. Mev's Jokes are a lot funnier.

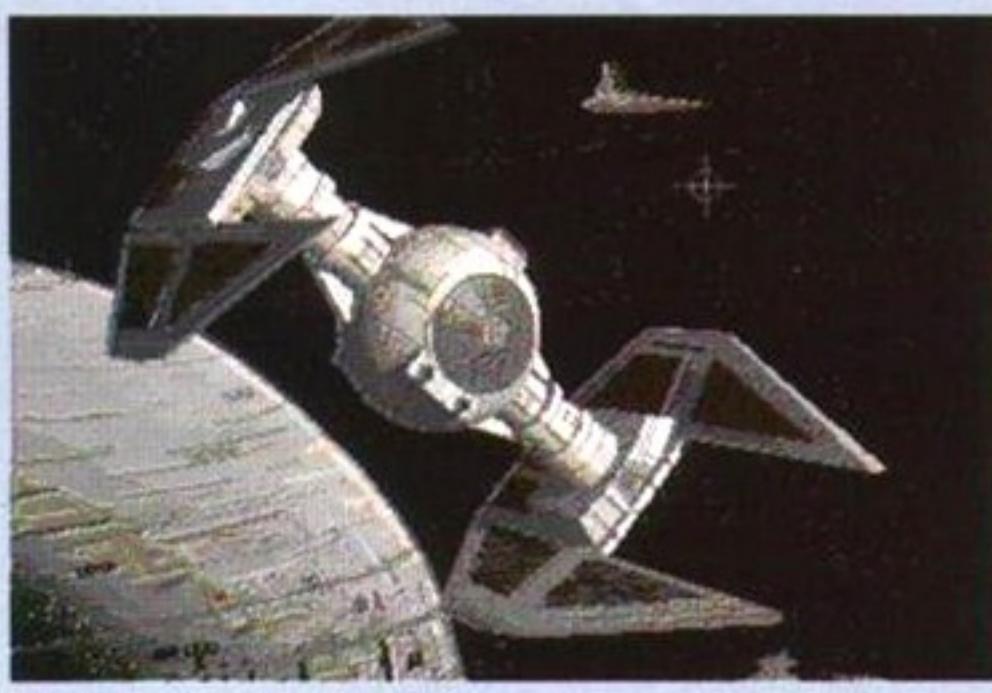
2) The only people who can tell the difference between the two guitars are the ones who can tell Carlsberg from weak homogenised fizzy crap.

3) Erm... is it? Must be something in the water...

Continued overleaf



Moon by Mark Sweeney of Rotherham.



TIE Fighter by Nils Erichsen.



The Evil in Me by Martin Hansen of Denmark.

NOT THAT SONG AGAIN

PRIZE

I have a CDTV with a keyboard, drive and trackball. After spending hundreds on the set-up, I discover that a 1Mb-rated game won't run on the 1Mb CDTV. The game in question being *Sensible Soccer*, the best footie game there is on any machine, and I was a big *Kick Off 2* fan (you better turn to Page 66 and read our review of *Goal then hadn't you?* – Ed). My point is how do the Big C expect a machine to take off when they point out how good it is for games, but forget to mention that it has no joystick ports. Getting them requires spending an extra £50. I'm not surprised the CDTV was a flop when you consider all of its flaws. Let's hope that Commodore get it right with CDTV2. It is obvious that the CD medium is the way ahead but, as with most things, there is a wrong way and a right way.

Piracy. A big problem which no-one seems to have the answer to. It's obvious that clamping down on the pirates does not work, the risk seems to make them do it even more. Protecting software seems pointless because there's always someone who can, and will, break the protection, whether it be for financial gain, or just for the challenge. Cartridge-based software isn't immune to piracy either, just look at the SNES and Mega Drive, it's now common knowledge that you can buy a floppy drive that can put your games on disk. Even though the unit costs around £300, it's still only the cost of six games.

The only real answer to me is the way Jeff Minter decided to sell *Llamatron*. It may sound strange, but licenceware/shareware seems the only possibility. I would never have believed it, but I'm sure Jeff Minter will agree, and I found out when I ran a PD library, that relying on people's honesty does work. Even if it seems like a crazy thing to do. It works especially well if manuals or updated versions are promised in return for the registration fee.

Lastly, can I thank Renegade for the excellent service they offered me when my *Sensible Soccer* disk 2 was mauled by a virus.

Bruce Whitehouse, Stockton on Tees

The CDTV is capable of virtually anything any other Amiga is capable of. Although sometimes it needs the odd add on like the game brick or some extra RAM. We like it, and think that by selling over 30,000 units in the UK it is a bold success, and a machine ahead of its time, rather than a flop.

CDTV 2, if that is the name Commodore choose for their new CD-based machine, will surely correct many of the mistakes that were made on CDTV. But don't be too harsh on Commodore – how were they to know the right and the wrong way of marketing and aiming CDTV? It was a revolutionary product. As we have often stated in the past, the public were not prepared (and they're still not quite ready now) for the concept of a home interactive multiplayer. It's far more likely that Commodore will target the new CD machine at the same audience who are now purchasing the Mega CD in increasing numbers. Commodore's machine will have a faster processor, more colours and most likely a faster CD drive than the Sega machine, and will be a better console for it. And the Commodore CD machine will probably be expandable, via floppy drives and keyboard, to a full computer system.

*Your revolutionary idea to combat piracy has much to recommend it. Bryan Bell who won the GamesMaster AMOS competition with Charlie Chimp, and then placed a three level demo on our Coverdisk has now had more than 3,000 responses. Each of these people sent him £5 in return for two disks, one with the full game and one with source code. That means Bryan stands to have over £10,000 left over to put towards cake and buns, a holiday for the family or his next game. Jeff Minter made quite a tidy sum from *Llamatron*, and not surprisingly so, it is an incredible game. But it is unlikely that the software houses would ever undertake that approach – they want big turnover and big profits.*

Next month

Issue 50

September 1993

It's party time!



Amiga Format is 50 – yes 50 – issues old and so we're putting on something special that you won't be able to resist. How about this – the best-ever top 50 products, whether they're games, serious software or hardware – looked at, turned inside and out, everything about their backgrounds brought to the fore, where the products are now and, even more importantly, where their makers are, what they have been doing, and what they are doing now. Don't miss it!

Prints charming

We often get asked by people which printer they should buy. And it's fair to say that these days it's a difficult decision to make. Panasonic, Epson, Seikosha, Citizen, Oki, Star, the list isn't quite endless, but it's very long indeed. And they all make excellent machines. But to really get the most out of your printer you really need software that gets the most out of your printer, and let's face it, we're not talking preferences drivers here.

There are a proliferation of programs designed to make your printed output better, and next month we take a look at all of them! We line 'em up side by side, at the start of a 100 metres sprint and see which one reaches the end first. And after it becomes obvious that none of them are going to move at all, we load 'em into our Amigas and try printing with them. Check out the results of the great printer driver debate in next month's issue.

Waiting for you at your local shop
from **Thursday July 22!**



Exiles by Shis Wei Wang of Australia



IT'S NOT ME

Musicolor has been receiving excellent reviews, but I am slightly perplexed because every review says that the program is based on the Tobin System. This rather infers that someone has taken the Tobin System and based *Musicolor* on its principles.

This is not the case. The program is the system. I think one of the reasons the program is so well thought of is that it is no flash in the pan, but it is something I have devoted all my life to – 26 years in all! I have written 36 books on the subject and I am still working on other ideas.

I wrote every word of the program and gave the programmers all the diagrams in detail. I wrote all the music and script for Derek Griffiths. The characters were my invention and I wrote the lyric for the song. My daughter wrote the music for the song because I thought she was more au fait with youngsters tastes, being a professional jazz pianist who lives and works in New York.

So you see, the words 'based on' hardly apply.

Having said all this I would like to say that Binary Visions did a brilliant job of the programming, and Derek Griffiths spoke the part beautifully.

I'm not just being pernickety about this, but while this misleading concept is put about, people don't realise that I am alive and kicking and available for lectures and seminars – which is my main career.

Candida Tobin, Sawbridgeworth

So there you go, Ms Tobin is available for talks, seminars, lectures, parties and barmitzvahs. And she can be contacted at the Old Malt House, Sawbridgeworth, CM21 9AX, if you wish to engage her services.

A FREE THOUSAND

I've got a great answer to all of Commodore's compatibility problems. Why don't they make an Amiga with a CD drive, 8Mb as standard, 32-bit, AGA graphics, and so on, all for under £50? It'd be a huge hit with everyone, and they would sell so many that they wouldn't have to build any more machines.

Also, where has Eric Schwartz gone? Is he working on a 10Mb demo, or can't he be bothered to do any more anims?

Shaun Usher, Colwyn Bay

An interesting point Shaun, and one which leads us to wonder why Ferraris cost more than £5,000, how come you can't get a first class seat to New York on Concorde for a tenner, and why we have to pay for beer at all. If Commodore made the machine you suggest at the price you suggest, it may solve a few small problems, but it would leave them with one big one to deal with... bankruptcy.

Eric Schwartz is alive and well and living at his house. See PD Demo Zone for news of his latest work.

CAN YOU CDC FROM HERE?

I am interested in buying one of the new AGA Amigas. As I cannot afford the new A4000/030, I was thinking of buying an A1200. The thing is I want an Amiga with a hard drive and CD capabilities, will there be a CD drive for the A1200?

Also, if there is any truth behind the rumours of a new CD driven machine: How much do you think it will cost? Do you think it will be released this year? Do you think it will support hardware such as hard drives? Thanks in advance if you can supply any answers to these questions.

Kevin Dixon, Cleveland

It is a very strong possibility that CD drives will be available for the A1200. Especially with rumours of a CD machine bearing the internals of the A1200 being under development. The recent appearance of ICD's Viper A1230 and SCSI 2 adaptor also add weight to this possibility.

As for there being any truth behind the rumours of a new CD console, they say that there is no smoke without fire, and there's certainly plenty of smoke in this area. We expect it will cost between £250 and £300, but we also expect prices to fall as Christmas approaches. Yes, we mean Christmas 1993 – we do think it will be launched this year.

We also expect the new CD console to have connectivity for an external floppy drive, and keyboard. Hard drive may not be supported, since this would require the inclusion of an IDE or SCSI interface, something Commodore may wish to exclude in order to keep the price down.

LET US ENTER

I am writing to you from the land where we never qualify for the World Cup, where computer shops stock things like *Classic Invaders* and *Protector*, where there are more sheep than people. Yep, you've guessed it. New Zealand.

It takes *Amiga Format* such a long time to reach us down here, for instance I have just received the February issue. So I want to suggest that you somehow have a competition for overseas readers so that we too can Spot the Shot, Rave on a Rave, Perform a Miracle, etc, etc.

Liam Ryan, Gisborne, New Zealand

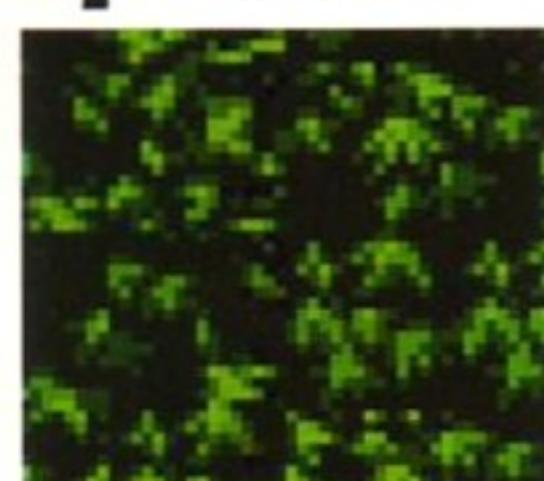
Since your letter was posted in April, Liam, and addressed to Damien, I can tell that it takes things a good while to get either way between us and you. What we'll do, next month, is we'll put together a competition with a massively long entry period, something like six months, and we'll only let overseas readers enter. How does that sound?

CDTV CREATIVITY

I have recently bought a Commodore Amiga CDTV multimedia pack and I am quite interested in animation, morphing, designing and other stuff like that. Please could you tell me what the best art package is that includes these features. Could you also please tell me about any upgrades and accessories I might need for the programs you recommend.

Mike Woods, St Austell

Your machine, being an Amiga like any other under the sexy black exterior, is well capable of these things. In fact, being an Amiga, means that it has more and

Spot the shot 49

Do you know which Amiga game this is a portion of? Then send us a postcard and you could win a T-shirt. Just put your name, address and the name of the game on the card and post it to us at the following address:

Spot the Shot 49, Amiga Format, 30 Monmouth Street, Bath BA1 2BW. The first correct entry pulled out of the hat every month will win a fabulous Amiga Format T-shirt!

better software available for better prices than most micro computers have.

If you're going for animation, you might well want a hard drive. More memory, particularly chip RAM, is advisable for any kind of graphics work. Try giving Indi a call on 0543 419999, they have one of the biggest ranges of CDTV hardware expansions available. The software you need to be looking at is Deluxe Paint IV, Image FX and Morph Plus. For more details of these turn to page 151 and order yourself a copy of the Amiga Format Special Complete Software Guide. This packed issue has details of virtually all the programs available, broken down into handy categories. A look at the graphics section should tell you all you need to know.

THERE'S ONLY ONE...

There's always one isn't there? This time it's me. In his 1990 book *The Ghost from The Grand Banks*, Arthur C Clarke states that he uses MandFX by Cygnus Software on his Amiga 2000, and not VistaPro on an Amiga 3000 as you said in AF 48. Admittedly, he could have upgraded since then, and I am going to look a right idiot if he has...

Perry Haynes, Irthlingborough

We actually spoke to Arthur on the phone, he has upgraded, and he got John Hinkley, one of the authors of the fractal landscape generator Vista Pro, to install it on his machine, an A3000. The privileges of being one of the world most respected authors, eh?

ARE THEY, OR NOT?

The review of *Graham Gooch's Cricket* in *Amiga Format* 47 showed no sign of not being A1200 compatible. On Page 89 of the same issue a 'Datagem' advert quoted the games as not being A1200 compatible. This is again true of the review of *Arabian Nights* in *Amiga Format* 46, which is also quoted in the same advert as not being A1200 compatible. Are they or aren't they?

It makes no difference to me as I haven't got an A1200, but it could cause confusion all the same.

Just a quick word on the age old 'more/less' dispute. More news, more game reviews, more serious reviews, more adverts, more sex (oops, wrong letter), in fact, more of everything.

Sorry about the block capitals but my writing is... (at this point the writing drops out of caps and becomes immediately indecipherable – ed).

Stewart Newman, Dagenham

Look! We checked when we reviewed them, we just checked again, and then we rang their mums and asked, those games are definitely A1200 compatible.



The winner of Spot the Shot 47 is Andrew Harold of Aberdeen, who, like all the other people waiting for an Amiga Format T-shirt, will be very pleased to hear that they are nearly ready.

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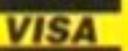
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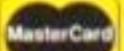
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It's for charidee...

Kyle Harris is a man with a mission. Actually he's a singer/songwriter with a mission, but that's not important right now. What the enterprising Kyle has managed to do is get himself sponsored for every feature or snippet about him that gets into print. The money goes to Multiple Sclerosis victims, so we're doing our bit.

Kyle has also secured a donation for every time a recording artist covers one of his songs. So if any of you are fabulously rich and famous rock stars (or your dads are... Joe) then get covering Kyle's numbers. In fact if ace psychedelic noise merchant band 'Jellyfish Kiss' are still AF readers (and we're sure they are), we think they should take note and give Kyle's compositions a touch of Kramer noise. And then there's always Imaginary records, the label that has made a name for itself by releasing tribute albums to great recording artists like The Velvet Underground (who Marcus has just seen at Wembley) and Bob Dylan. To them we say, why not do a Kyle album, oh! and when's the Monkees' tribute coming out?

FUTURE SHOCK



Panasonic have just announced a new range of photocopiers featuring all new Neuro Fuzzy Logic technology. To save you the embarrassment of asking an assistant in Dixons what NFL is all about (as if they'd know) we've prepared a bluffer's guide to Fuzzy Logic, read on...

Fuzzy logic was developed in 1965 by Lofti A Zadeh at the University of California, Berkley. It was first practically applied in the UK for controlling steam engines.

Neuro Fuzzy Logic is a state-of-the-art version of Fuzzy Logic with more bells and whistles, which even less people understand than the first version. It was invented when someone accidentally mixed the Fuzzy Logic with the basis of neural networks. It's dead good at controlling vacuum cleaners and washing machines.

Despite its name Fuzzy Logic doesn't look very blurred, in fact it's just a concept, so you can't see it at all!

NEVER MIND THE...

One very popular television show that is based on recounting the positions of the nation's most popular records in order, and then playing their videos, has gotten a bit sensitive about the use of certain words recently. When industrial dance band Oil Seed Rape got a mention recently their name was unceremoniously abridged to Oil Seed. As Nutts pointed out "They'll soon be doing a run down of the AI charts, 'cos they don't want to say bum".

Very rock 'n' roll, eh?

Blue is the Colour

Top computer company Commodore managed to get their name on everyone's lips, and the players' chests, when they sponsored Chelsea football club. The only problem was, while everyone knew their name, no one knew who the heck they were or what they did.

Solution? Drop the Commodore name and get some advertising for the product.

Now everybody knows what an Amiga is, don't they? If they don't now they will do when Chelsea storm to victory in the World Cup and the Olympics and whatever else it is that footballie types do. (If this obvious lack of footballing knowledge is bugging you to tears, stop reading this now and turn immediately to page 66 for the first review of Dino Dini's *Goal!*, which is finally finished).



Actual Reality

Back from its summer holidays, and sporting a rather fine tan... it's that page where we print all the stuff that doesn't really belong anywhere else in the magazine.

BLACK ICE No, we're not giving you a very out of season driving alert. If after reading our well valid Cyber feature you went out and bought a William Gibson book you'll know that Black Ice is the name for vicious intruder protection systems. It's also the name of the UK's best Cyber mag. Call them on 0273 325237

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This mag comes from Future Publishing, a company founded just seven years ago but now selling more computer magazines than any other in Britain. We offer:

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- Then satisfy them.

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Amiga Format Issue 49

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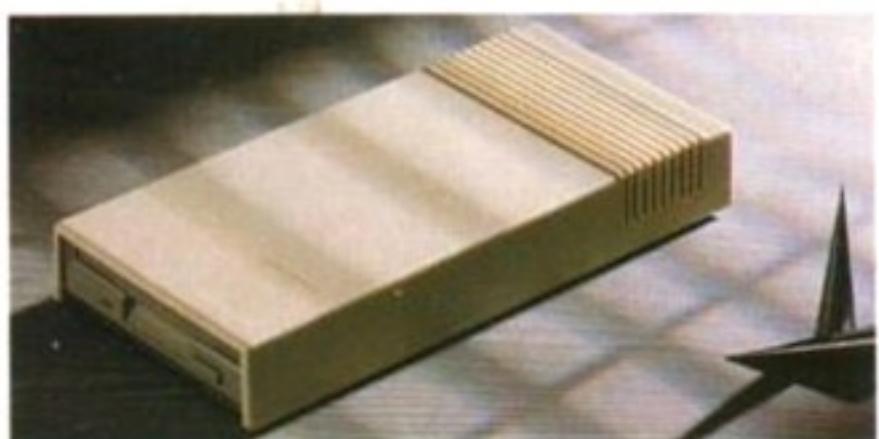
PC880B POWER DRIVE

The award winning external disk drive which includes Anti-Click (cures that annoying click), Virus Blocker (prevents viruses) and built-in Backup hardware.

The PC880B is available with Blitz Amiga, Blitz and X-Copy or Cyclone compatible (this drive is only available to registered owners of X-Copy Professional. You must provide proof of purchase of X-Copy Professional). The drive comes in a choice of two colours, black or cream.

PC880B WITH BLITZ AMIGA £60
PC880B WITH BLITZ, X-COPY £75
PC880B (CYCLONE COMPATIBLE) £65
PC880B IN BLACK CASE £65

POWER DRIVES



PC880E ECONOMY DRIVE £49.95
PC881 A500 INTERNAL £45
PC882 A2000 INTERNAL £45

POWER DUAL DRIVE

Two high quality disk drives built into one compact unit, the drive includes the same features as the PC880B disk drive.

POWER DUAL DRIVE £125

BLITZ AMIGA

Backup disks at lightning speeds, and stop all external drives from clicking. Blitz does not let viruses from being written into the bootblocker. (The 1988 Copyright act applies)

BLITZ AMIGA £15

FLOPTICAL DISK DRIVE

The Floptical stores 20MB of data on a 3.5" disk (a SCSI interface is required).

FLOPTICAL A2000 KIT £289
FLOPTICAL A500 EXTERNAL.... £389

POWERSCANNER V3.0

The award winning PowerScanner is able to scan from 100 - 400DPI in 64 greyscales. The scanning software included allows you to edit and manipulate any image you scan.

The scanner interface includes a through port for a printer.

POWERSCANNER V3.0 £99
POWERSCANNER INC. OCR £149
OCR SOFTWARE ONLY £49

COLOUR POWERSCANNER

Scan 100 - 400 DPI in 4096 colours, with the Colour PowerScanner. The scanning software included allows you to edit and manipulate any image you scan.

The scanner interface includes a through port for a printer.

COLOUR POWERSCANNER £239

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If you consider your scanner system to be inferior to the Power Scanner, we will upgrade your software and interface.

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High resolution 24-bit colour flatbed scanning from Epson. Scan up to A4 in size on this 600 DPI scanner. Comes with PowerScan software.

EPSON GT-6500 (INC SOFTWARE) £799

EPSON GT-8000

High resolution 24-bit colour flatbed scanning from Epson. Scan up to A4 in size on this 800 DPI scanner. This is the ultimate in desktop scanning. Comes with PowerScan software.

EPSON GT-8000 (INC SOFTWARE) £1199

TRANSPARENCY ADAPTOR

Scan up to 5" x 4" transparencies. Available for the GT - 6500 and GT - 8000 scanners.

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DOCUMENT FEEDER

Automatic 50-sheet document feeder for the GT-6500 and GT-8000 scanners.

DOCUMENT FEEDER £399

A600 MEMORY CARD

1MB RAM with battery backed clock

A600 1MB RAM £39.95

PC501+ MEMORY CARD

Our RAM board is designed especially for the A500+ computer and comes with 1MB of RAM on-board to expand your memory to 2MB of chip RAM (fits in the trap-door).

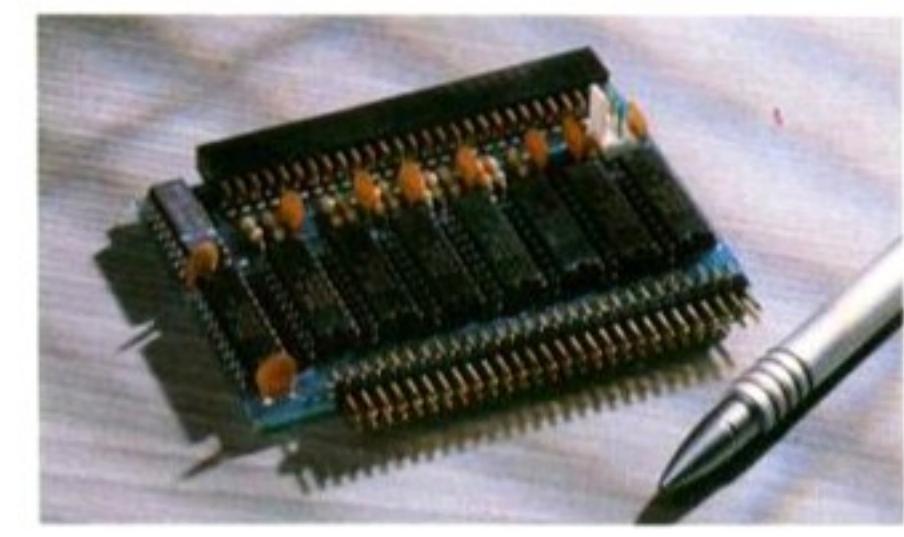
PC501+ MEMORY CARD £35.95

1.5MB RAM BOARD

Fully supports 1MB of chip RAM and is fully compatible with Fatter Agnus (requires Kickstart 1.3 and above, not compatible with A500+. Your Amiga needs to be opened, this may effect your warranty).

1.5MB RAM BOARD £85

1MB WITH THRU'PORT



Expand your A500's memory up to a total of 2MB without disposing of your existing 512K upgrade (works with 1MB chip RAM, 512K RAM must be 4 chip type or not exceeding 9cm in length. Your Amiga needs to be opened, this may effect your warranty).

1MB WITH THRU'PORT £49

A500 MEMORY CARD

4 Chip 512K RAM expansion with or without battery backed clock.

Free software included (A500+ compatible)

A500 CARD WITH CLOCK £29
A500 CARD WITHOUT CLOCK £24

A500 8MB POWERBOARD

Expand your Amiga from 2MB to 8MB of RAM. Plugs into side slot, full auto config. and full through port.

A500 2MB POWERBOARD £129
A500 4MB POWERBOARD £189
A500 8MB POWERBOARD £289
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A2000 8MB POWERBOARD

2MB to 8MB RAM expansion for the A2000

A2000 2MB POWERBOARD £99
A2000 4MB POWERBOARD £149
A2000 8MB POWERBOARD £239

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A wide range of Amiga's are available.

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A1200 60MB HD	£569
A1200 80MB HD	£599
A1200 170MB HD	£754
A1200 212MB HD	£819
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A4000 68030 80MB HD 4MB	£1129
A4000 68030 80MB HD 2MB	£979

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A wide range of monitors are available.

PHILIPS CM8833 MK2	£229
INCLUDES LOTUS 2, ON-SITE MAINTENANCE	
COMMODORE 1084S	£199
MULTISYNC MONITOR	£POA

ICD PRODUCTS



ICD sole distributor. Trifecta is SCSI 2 or IDE compatible. (Trifecta EC is only IDE)

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80MB HD	£239
160MB HD	£329
200MB HD	£399
TRIFECTA 500 LX BARE	£195
80MB HD	£295
160MB HD	£359
200MB	£459
TRIFECTA 500 EC BARE	£145
80MB HD	£279
160MB HD	£339
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AD IDE 2 PRIMA BARE	£70
80MB HD	£245
160MB HD	£309
200MB HD	£399
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AD IDE 2 NOVIA 60MB HD	£259
80MB HD	£299
130MB HD	£379
212MB HD	£499
NOVIA 2.5" MOUNTING KIT	£19
ADSPEED AMIGA	£119
FLICKER FREE VIDEO 2	£185

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The Power BBS is a bulletin board service. Phone 0234 841503. Speeds up to 16.8K

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SUPRA FAX MODEM+	£119
(INCLUDING PSU, CABLE AND SOFTWARE)	
SUPRA FAX MODEM 32BIS	£249

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HOME MUSIC KIT	£69.95
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A 40 MHz 68030 EC accelerator.

80MB HD 0MB RAM	£549
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200MB HD 0MB RAM	£699
68882 UPGRADE KIT	£224

GVP SERIES 2 HD

External hard drive for the Amiga 500. Expand up to 8MB on-board.

80MB HD	£339
160MB HD	£409
200MB HD	£599
EACH 1MB X 8 SIMM	£30

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We stock a wide range of parts and spares.

1MB X 8 SIMM	£30
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Fit 128MB on one Optical disk.

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128MB OPTICAL EXTERNAL	£999
128MB 3.5" OPTICAL DISK ..	£39.95
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Use a VCR as a backup storage device, 200 Amiga floppy disks fit on to a 4Hr tape which can be used for an alternative hard disk backup system. What's more, you can watch television on your 1084S monitor.

VIDEO BACKUP SYSTEM £59.95

BARE SCSI HARD DRIVES

We can supply SCSI or IDE 3.5" drives in many sizes. These hard drives are suitable for GVP G-Force, GVP or ICD.

80MB	£179
160MB	£249
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2.5" IDE INTERNAL HD

Miniature hard drives for the A600/A1200 these drives come complete with a cable and installation software.

60MB INTERNAL HD	£179
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130MB INTERNAL HD	£299
170MB INTERNAL HD	£365
212MB INTERNAL HD	£430

GVP A2000 HARD CARD

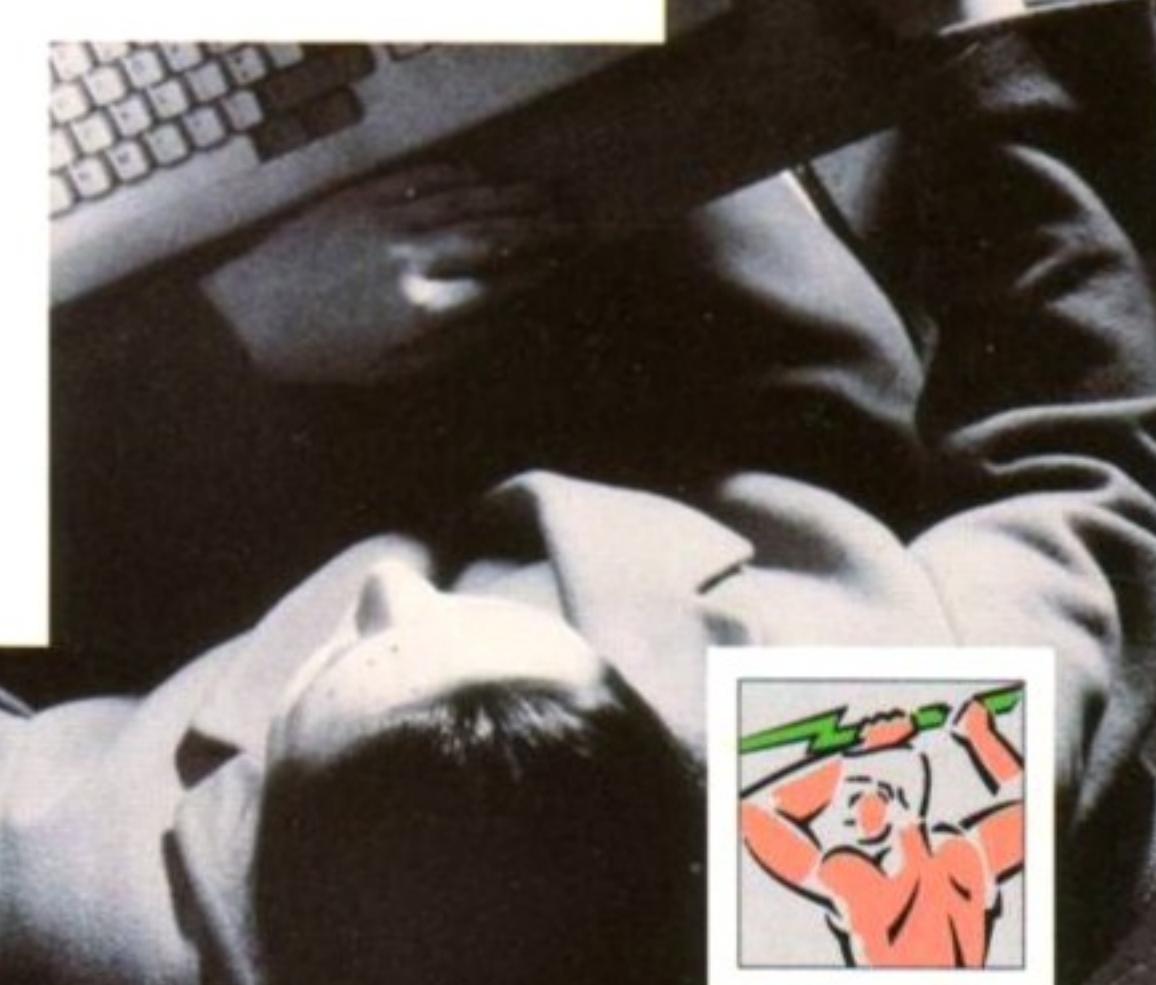
High quality SCSI hard card.

BARE	£129
80MB	£279
160MB	£349
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One of the most advanced Rom sharers.

ROM SHARE	£19.95
ROM SHARE INC. V2.04	£50
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ROM SHARE A600	£29
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Power Computing's innovative 4MB 32-bit memory expansion for the Amiga 1200 is now available. The PC1204 includes these many features:

Zero Wait State - Unlike some other expansions the PC1204 never leaves the processor waiting around for data, which means that your A1200 can run at its maximum speed.

Ultra Fast FPU - An optional maths co-processor speeds up intensive calculations. A 50MHz chip will speed up operations by up to fifty times.

Real-Time Battery Backed Clock - Allows files to be date-stamped with the correct time and date so that you know exactly when they were created.

Low Power - High density RAMs means low power consumption.

Easy To Fit - Fitted in minutes without the need to remove the computer's case.

Optional FPU Disable Switch - Disable the FPU instantly for software that will not run with a maths co-processor installed.

	Power PC1204	A leading competitor
Speed Vs standard A600	4.84 times faster	4.79 times faster
Speed Vs standard A1200	2.19 times faster	2.17 times faster
CPU MIPS	2.96	2.93

PC1204 4MB with clock, no FPU Processor **£185.95**
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PC1204 4MB with clock, 25MHz 68882 FPU **£279.95**
PC1204 4MB with clock, 33MHz 68882 FPU **£289.95**
PC1204 4MB with clock, 40MHz 68882 FPU **£299.95**
PC1204 4MB with clock, 50MHz 68882 FPU **£339.95**



The XL 1.76MB Drive for the Commodore Amiga.



Power Computing's XL 1.76MB Drive* for any Commodore Amiga is now available. The XL Drive includes these many features:

Formats to 1.76MB - Using high density disks you can fit a massive 1.76MB on each disk.

Acts as a standard drive - Insert an 880K Amiga disk and the drive behaves like any other Amiga drive.

Fully compatible - Will read and write disks written on an Amiga 4000 internal high density drive.

Compatible with PC disks* - Also read and write high density PC disks using a suitable device driver.

Compact size - No larger than a standard 880K floppy disk drive.

High quality design - Uses a high quality Sony high density mechanism.

Free - Box of 10 3.5" Polaroid high density disks.

Comes complete with disable switch and through port.

XL DRIVE

XL DRIVE £99.95

*Requires Kickstart 2 or above. *Requires Workbench 2.1 or above.

48Hr delivery **£2.50**, 24Hr delivery **£4.50**

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